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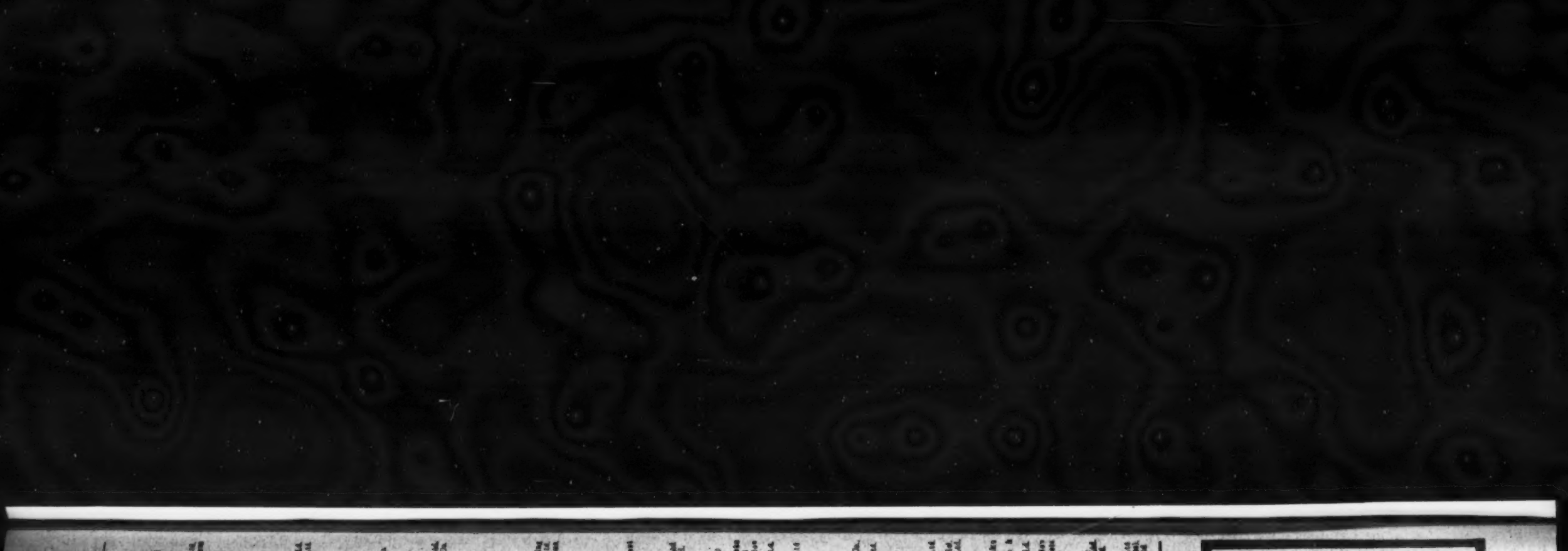


THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

CXXVIII.—No. 4276. JANUARY 16, 1925.

PROVINCIAL COUNCILS

THE valuable information that is being obtained by the Regional Town-Planning Committees which have been established for Manchester, the North Tyneside, West Middlesex, the Thames Valley, the Wirral Peninsula, the South Tee Side, Deeside, South Yorkshire, and elsewhere is being duly noted by those who are advising the Royal Commission now inquiring into local government. It is regarded as not improbable that this Commission will incline favourably towards a scheme already formulated for dividing this country into large areas, each governed by what may be called a Provincial Council. Such a scheme will have far-reaching effects not only on local government, but on our industrial development as a nation during the coming century.

When Lord Onslow, the Chairman of the Commission, was Parliamentary Secretary at the Ministry of Health, again and again he was faced with the complications that are due to our present local government system. Architects, too, are well aware of similar anomalies. For example, one set of by-laws is insisted upon in one area, while just over the borough boundary, less than a hundred yards away, quite another system is in force. These anomalies are not peculiar to this country. The expansion of our civic and industrial centres in all parts of the civilised world is producing similar problems. Councils on the Continent as well as in England are finding that such a question as smoke abatement cannot be solved by themselves alone without co-ordination. The chemical fumes and the smoke of Widnes and St. Helens sweep over parts of Cheshire when the wind is in a particular direction, and in one garden miles away the roses are always stunted because of the chemical factories on the other side of the Mersey. But the local Rural District Council can do nothing. The present system—or, in some cases, the lack of system—is, however, producing far more serious evils in the body politic than stunted roses. In London the majority of the boroughs cannot find available land on which to erect working-class houses, and yet, when the London County Council proposes to follow the extended "tube" and build out at Hendon they are met with a determined and strongly-supported local opposition. The smaller bodies cling desperately to their local independence, and naturally object to the approach of the Juggernaut of urban developments. Nevertheless, upon regional planning on scientific lines, thought out by architects, engineers, and others qualified to look ahead, partly depends the future of our civilisation. How are we to prevent central overcrowding? Where are the new houses to be placed? What open spaces shall be preserved for gardens, for allotments, or for recreation grounds? Where shall the new roads run, and how shall new districts be linked up by motor-'bus or electric train? Upon the answers to these questions depend the health of coming generations.

There is at the present time such a barbed wire entanglement of local Acts, parochial agreements, and compromises that the carrying into effect even of wise and reasonable proposals, necessitates a large expenditure of money in the promotion of parliamentary legislation, and often after a long conflict all the work is in vain. Such an impasse occurred recently in the failure of the proposed extension of the boundaries of the cities of Leeds and Bradford. All who have had to deal with these or other proposals during the last five years know well that there is a kind of creeping paralysis which blocks progress, and makes the carrying out of any comprehensive plan tardy and costly. At the same time practically every committee of experts that has enquired of recent years into the question, irrespective of party division, has inclined—at any rate in theory—to some form of regional organisation being established, which may override parochialism so far as the main local government services for housing, water, transport and electricity are concerned. The South Wales Regional Survey, for example, which considered the problem of the housing needs in the southern part of the Welsh coalfields, where new pits are constantly being sunk, was forced to recommend that a regional town-planning board for the whole area should be set up. Hidden away, too, in the pages of this somewhat voluminous report may be found a further recommendation that there should be formed for South Wales a Regional Council on similar lines to that of the London County Council. Again, the Royal Commission on Sewerage Disposal in their third report, which was published in 1903, advised the establishment of a River Board in order to prevent waste of water. The Water Power Resources Committee that reported in 1921 supported this recommendation, and further proposed that these River Boards should be given the supervision of all water interests, including fisheries, navigation and the drainage of the land. A similar development is taking place with regard to electricity, and there are already in existence under the Acts of 1919 and 1922 a number of joint authorities on which sit representatives of both private enterprise and local councils.

The line of development thus marked out has been indicated by certain officials, notably by Dr. I. G. Gibbon, an assistant secretary of the Ministry of Health, who is well known in the architectural world owing to his enthusiasm for regional planning. It is clear that the time has almost come for the suggestion of provincial councils constituted of elected members to receive serious consideration. These councils would not necessarily take away the powers exercised by local authorities, but to them would be delegated some of the detailed work that is at present laid upon the Ministry of Health. This comparatively new Department of State, only five years old, is, at the present time, being far too much burdened with detailed work. It is absurd that the officials and the members of a local authority should have to go to Whitehall in order to argue at length over the cost of the electric light fittings provided five years ago for a housing scheme. Central officials, however able, and however sympathetic, cannot possibly understand the local feeling of every part of a country. The creation of Provincial Councils would assist in providing buffers between our Whitehall bureaucracy and our local authorities.

The suggestion, so far as it has gone at present, is to make full use of voluntary representation. The proposal that was put forward some time ago by Mr. Sidney Webb (the late President of the Board of Trade), in his scheme for the constitution of a Socialist Commonwealth of Great Britain, is regarded as quite out of court by those who appreciate the strength of the present local government machine. Mr. Webb suggested that this country should be divided into a number of small units, each of which would be represented by a man or a woman, who would give, for a salary, whole time to the work of supervising and co-ordinating local government services. But the idea of Provincial Councils that may find favour is much more in accordance with our national tradition. In order to do something to check the increasing friction, due to the constant conflict between the interests of rural districts of town and country at the present time, elected and voluntary representatives would be given certain powers to co-ordinate those services essential to health, like regional planning or water.

NOTES.

St. Paul's.

ONCE more we are faced with an urgent appeal on behalf of the structure of St. Paul's. The Dean and Chapter have made an appeal to *The Times* for co-operation in bringing the matter to the notice of the public, and the response has been immediate and generous. We need not stress the importance of energetic action in safeguarding our great Cathedral, and we hope that the attention now focused on St. Paul's may lead to a more active public interest in the fate of the other Wren churches in the City which are threatened, not by the ravages of time, nor by the decay of material, but by wilful destruction at the hands of man.

The Manchester Art Gallery Assessorship

THE death of Mr. Paul Waterhouse leaves a vacancy in the triumvirate appointed to adjudicate in the Manchester Art Gallery competition. Probably all the competitors would be willing to leave the decision to the two remaining assessors, Professor Reilly and Dr. Percy Worthington, but if the vacancy is to be filled, how would it be to appoint someone who has made a special study of art galleries—like, say, Mr. Hurst Seager? The first necessity in such a problem is the efficient display and lighting of the exhibits, though the character of the elevational treatment should assuredly be of the very best our modern architecture can show, and Manchester can do with something of that kind very well.

Competition Burdens.

A CORRESPONDENT writes in reference to this competition:—"The lamented death of Mr. Paul Waterhouse occasions the appointment of a third assessor in this important competition. You have emphasised the unusually onerous burden which the conditions place upon the large number of architects who necessarily will labour in vain. And the request may therefore be repeated that the assessors in their new relation will ease this burden. It is to the interest of the profession that the great scandal of wasted labour in competitions should be reduced and not increased beyond more than is absolutely necessary. In the case of this large building, plans are asked for to 1-16th scale, but four elevations and two sections at least are demanded to ⅛th scale, besides half-inch details, all 'rendered.' There is yet time to make the submission of 1-16th scale elevations and sections permissible instead of the huge ⅛th scale drawings demanded. It cannot be that experienced assessors will not trust their judgment without compliance with these monstrous demands, which handicap many able young men."

Figure carved in Granite.
MRS. PHŒBE STABLER, Sculptor.

Garden Figure in Lead.
MRS. PHŒBE STABLER, Sculptor. (*See p.* 105.)

Housing and Craftsmanship.

THOUGH far from suggesting such a thing, we must none the less be very careful that great national difficulty of housing is not exploited to the advantage of private interests, owing to temporary difficulties, but that whatever is done shall include due appreciation of what is due to human needs now and in the future. Our schemes should not further the destruction of craftsmanship, or disfigure the country. We ought not, in fact, to permit circumstances to triumph over us. The nation should rise to an occasion which presents the opportunity for something better than the deterioration of the building industry.

The Human Side.

WE cannot, therefore, afford to ignore the human side in this housing question. We have to provide houses for the workers, but in order to provide them ought we to lower our standards of building, which means the lowering of labour itself, instead of making it an opportunity for better things? We are told by a contemporary in describing the mechanical methods of steel production that "one man could be solely occupied in cutting pieces of wood to one particular length." It appears to us that Lord Weir's scheme presents no outstanding advantage, as the steel houses to be built under it are not particularly cheap, and not very permanent, and it should still be possible, before there is any general acceptance of this steel house—which, in order to build, labour has to be turned into an "automatic machine"—to find a better and more human solution. If we look at this great need in the light of the responsibility to ourselves, to the country, and to those who will come after us, we may find a better way.

The Society of Arts Competition.

A SECOND competition on the lines of one already held last year is announced by the Royal Society for the Encouragement of Arts, Manufactures and Commerce, in which prizes are offered for "the most ingenious and best fancied designs." Last year there was an exhibition at the Victoria and Albert Museum of the designs contributed to the first competition, which we noticed at the time in these columns. The subjects of this year's Competition include Architectural Decoration, Textiles, Furniture, Book Production, Pottery and Glass, and "Miscellaneous," and the Society will confer its Diplomas "on any candidate whose work shows exceptional artistic ability, and practical knowledge of the materials and processes of his trade." Messrs. Cadbury offer a travelling scholarship, and Messrs. J. S. Fry & Son, Ltd., Messrs. Lever Bros., Ltd., Messrs. Nestle, and A. & F. Pears, Ltd., also offer prizes. Entries can only be received from individual designers. We trust that as a result of this competition we may see some advance in the standard of design towards greater restraint and simplicity, and that as we trace the improvement in printing to-day as largely due to a return to more traditional forms, and an avoidance of "up-to-date," so in design generally, a more thoughtful studying of past design and appreciation of its value as an example is the way to lift our own above the ephemeral and the vulgar.

To Rickmansworth by Electric Train.

THE project of the Metropolitan Railway Company for the electrification of a further twenty-three single-track miles—now an accomplished fact—removes many limitations and materially enhances the value of that neighbourhood as a place of residence. In view of the improved travelling facilities now provided, and the estate developments, excellent opportunities are afforded on land near to town and in charming surroundings for building purposes, and it is to be expected that many additional residents will now be attracted to the countryside. A large number of houses combining beauty and utility have already been erected. Few more delightful spots could be found than Cedars Estate, 500 acres in extent, which is notable for its situation. It is undulating in character, possesses a subsoil of gravel, sand and chalk, and is conveniently situated near Rickmansworth station, which is reached in twenty-five minutes by a good service of non-stop electric trains from Baker-street Station.

Proposed New Thoroughfare, Norwich.

THOUGH some of our interesting old towns and cities may not at present be growing much, they should be planned with regard to the future, for a certain wise revision of old conditions is needful to be more in accordance with modern ideas, and may lead to useful economic values in the future. The city of Norwich is a case in point, and we are glad to note that Mr. Geo. J. Skipper, the well-known architect of that city, has put forward a scheme for a direct north and south thoroughfare through the city between St. Stephen's and St. Augustine's Gates. He advances many arguments in favour of his proposal, and we hope it may be carefully considered by the city authorities. It is needless to say he does not suggest anything to interfere with the old-world interest of the city.

"Mother and Child" (in Concrete).
[MRS. PHŒBE STABLER, Sculptor. (*See* p. 105.)

Housing Costs.

ALTHOUGH the exact costs of housing building are difficult to ascertain, probably the safest guide to-day is an analysis of the contracts let by local authorities. On this basis it is apparent that there has been a decrease in housing costs during the past few weeks. For the average prices included in contracts let by local authorities during the month of September last was £438 for a non-parlour house and £502 for a parlour house. For November, when Mr. Chamberlain became Minister of Health, the average price for non-parlour houses was £436, and for parlour houses £479, a drop of £23. The latest official figures as to the progress of housing also reveal other interesting facts. It would appear that local authorities are gradually inclining to the Wheatley Act for their schemes. Although authority had been given for the building of over 60,000 houses by local authorities under the Chamberlain Act, of these over 8,000 have now been deducted for schemes that have since been approved for the increased subsidy under the Wheatley Act. The number of houses thus being transferred is increasing. But whereas under the 1923 Act over 112,000 houses have been authorised to be built by private enterprise, there are only 478 so approved under the 1924 Act.

Merton Tapestries.

THE tapestry industry founded by the late William Morris was productive of some very beautiful work from the designs chiefly of Burne-Jones and Walter Crane. This collaboration between artists of so much sincerity and distinction gave great prestige to the industry which was sustained by their gifts. It is difficult for the work to retain the same prestige when it is no longer supported by such artists, and unless it is able to sustain itself without subsidy—which has been suggested in order to secure its continuance—it hardly appears desirable that it should do so. While we should like to see some rich men coming forward with commissions to enable the industry to continue, we cannot see any claim for a public subsidy while there are several other industries of equal or greater title to receive it.

Head Carved in Concrete.
MRS. PHŒBE STABLER, Sculptor.

An Appreciation of Art.

IN an address given recently to the "Art Teachers' Guild," by Mr. H. L. Wellington, on "The Appreciation of Art," he pointed out that many prejudices had to be got rid of. "At the National Gallery many people could not stand saints and ugly old people with beards," and another prejudice that had to be got rid of was the idea that "art was a sort of superior juggling." We are not sure but that many people are better informed than the lecturer thinks. It is true that ancient art cannot speak to us as does contemporary work at its best, and much of the old beautiful ecclesiastical art of saints and old men with beards is rather far away from our thinking to-day.

Improved Tubes.

THE Parliamentary Secretary to the Ministry of Transport recently received a deputation from the Kearney Society, who urged the necessity for a large number of additional tube railways on the outskirts of London. The deputation suggested that the Kearney high-speed railway was the only adequate solution to the problem. Mr. E. W. Chalmers Kearney explained the system, which is to keep stretches of line between stations at a depth of one hundred feet, but to rise by a sharp gradient to each station close under the surface of the street, thus saving the expense and trouble of installing and keeping up lifts and escalators. There can be little doubt that people would use such railways more freely than those which necessitate an immediate plunge into the bowels of the earth, and ventilation should be greatly eased, for it would resolve itself into ventilating the stretches of tunnel between stations.

GENERAL NEWS

Professional Announcement.

As from January the Architects' and Surveyors' Assistants' Professional Union will be known as the Association of Architects', Surveyors' and Technical Assistants. The change in title was decided upon at a special National Convention of Delegates in 1924, to meet the demands of their members, but they state on no account must it be held to imply any change in their policy, which is to protect and advance the interests of the salaried architect, surveyor, civil engineer, and the draughtsman, surveyor, estimator, &c., employed by commercial firms and contractors.

A.A.S. & T.A. Dance.

A dance will be held at Caxton Hall, Westminster, on January 30, at 7 p.m., by the Association of Architects, Surveyors, and Technical Assistants.

Dr. Clifford Memorial.

The Congregational Union propose to erect a £15,000 Sunday School and Institute, at Westbourne Park, W., as a memorial to the late Dr. Clifford.

London School of Medicine.

The London School of Hygiene and Tropical Medicine has invited five architects to submit plans for the erection of a new school on the site recently acquired in Gower-street. It is stated the building and site will cost over £400,000.

Obituary.

The death took place recently at Sowerby, Thirsk, of Mr. Robert Rodwell, architect, of that town.

The death has occurred of Mr. Stewart Henbest Capper, a member of the European Department of the Ministry of the Interior and formerly Professor of Architecture at McGill and Manchester Universities, in the Anglo-American Hospital, Cairo.

Architect's Estate.

Mr. Henry Perkin, F.R.I.B.A., of Castle Cliffe, Knaresborough, Yorks, of the firm of Perkin & Bulmer, architects, a past-President of the Leeds and West Yorkshire Architectural Society (net personalty, £5,424), left £6,158.

Business History.

Mr. H. Spencer Stowell, M.S.A., 70, Victoria-street, S.W.1, informs us he is collecting data for a "History of Business," and in order to make his book as complete and authentic as may be, he will be glad to receive from any old-established firm or organisation a concise description of their growth.

Exeter Cathedral.

During the past few weeks the last of the series of the cloister windows of Exeter Cathedral has been filled with ancient glass. The work has been carried out under the superintendence of Miss V. S. Drake, who now occupies the position, formerly held by her father, the late Mr. Maurice Drake, and her grandfather, as the official glazier of the Cathedral.

Westminster Bank.

The net profits of the Westminster Bank, Ltd., for the past year, after providing for bad and doubtful debts, and all expenses, amount to £2,013,501 18s. 7d. This sum, added to £568,479 15s. 8d. brought forward from 1923, makes available the sum of £2,581,981 14s. 3d. The dividends, 20 per cent. on the £20 shares, and 12½ per cent. on the £1 shares, absorb £1,287,886 9s. 6d. £100,000 has been transferred to Bank Premises Account, £300,000 to Rebuilding Account, £200,000 to Contingent Fund, and £100,000 to Staff Provident Fund, eaving a balance of £594,095 4s. 9d. to be carried forward.

COMPETITION NEWS

Geneva Conference Hall.

The League of Nations will shortly hold a competition for the selection of a plan for the construction of a Conference Hall at Geneva on the ground presented to the League by the City and Canton of Geneva. The competition will be open to all architects who are Nationals or State members of the League. An international jury, consisting of architects from Great Britain, France, Italy, Belgium, Austria, and Switzerland, will examine the plans submitted and decide their order of merit. A sum of £4,000 will be placed at the disposal of the jury for division among the architects submitting the best plans. A number of free copies of the conditions will be deposited at the Royal Institute of British Architects during February, and application should be made to the Secretary, R.I.B.A., 9, Conduit-street, W.1, by intending competitors. Single copies can be procured direct from the Secretary-General of the League of Nations at Geneva for the sum of 20 Swiss francs, payable in advance. On the nomination of the President of the R.I.B.A., Sir John Burnet, A.R.A., has been appointed as the British representative on the Jury of Assessors.

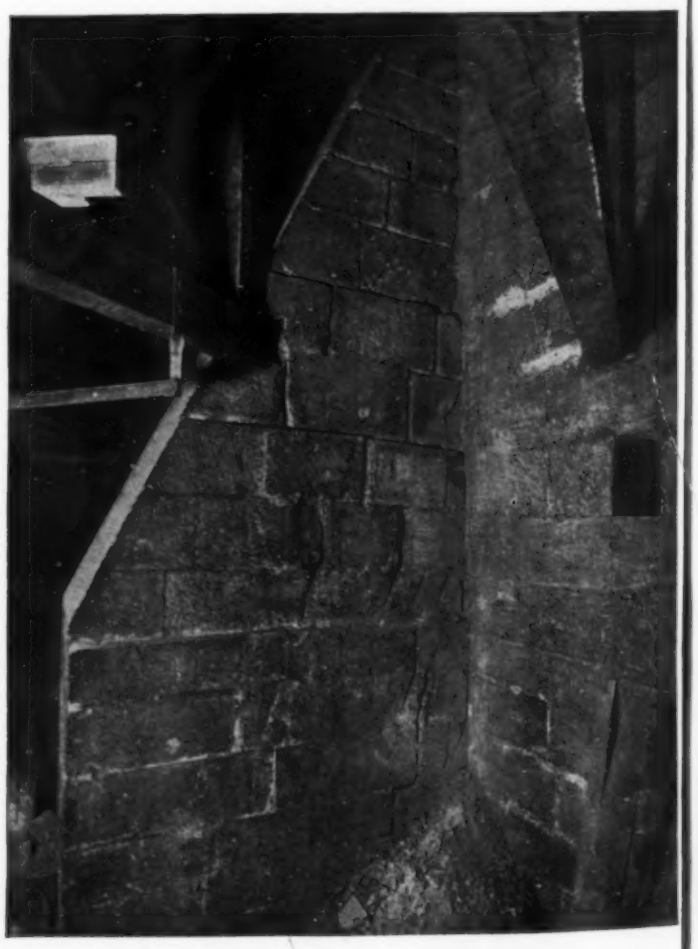
Mold Housing.

The Mold housing scheme competition is banned by the R.I.B.A.

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending in date, and second the issue of *The Builder* in which full particulars were given):—Masonic Hall (May 1). Manchester Art Gallery (Feb. 28; Aug. 22). Industrial Designs (June 25; Dec. 26). Constantine College (May 15; Dec. 19). Valetta Lay-out (June 30; Jan. 2). Argentine Institute (Dec. 31; Jan. 2). Offices, Nairobi (March 28; Jan. 9). Leeds Library (Feb. 16; Dec. 19).

FIRST DRAFT FOR AN EXPLANATORY DIAGRAM SHOWING COMPONENT PARTS OF THE CATHEDRAL.



ONE OF THE SOUTHERN GROUP OF BUTTRESSES.

St. Paul's Cathedral, (*See p.* 101.)

ST. PAUL'S CATHEDRAL

By WILLIAM HARVEY.

THE Dangerous Structure Notice served by the Surveyor of the City Corporation upon the Dean and Chapter of St. Paul's Cathedral has provided emphasis and point that were lacking in the second interim report of the Commission appointed in 1921 to advise upon the best method of executing repairs to the fabric.

The news that St. Paul's was in danger was calculated to arouse public interest, and has filled the daily papers with reports of the building's condition, and with conflicting opinions and suggestions for its treatment. These popular accounts cannot, however, determine the highly important statical considerations that must be discussed and understood before the best method of repair can be decided upon.

Two alternative methods of treatment have been mentioned in the Commission's report, which proposes that the eight defective main piers supporting the dome be repaired by grouting under pressure and by the replacement of damaged facing stones with new, although it is admitted in the same document that the prospect of demolition and rebuilding looms inevitable in the not remote future. Such proposals are highly alarming and unsatisfactory, and while the first does not go nearly far enough the second goes much too far. Nor do these suggestions carry us in the right direction.

The Commission, with its proposal to patch now and rebuild later, and the Dangerous Structure Notice with its implication of pulling down the building forthwith, are most misguided in that they do not aim at a desirable end.

The preservation of Wren's magnificent monument sound and whole is the object that must be kept in view and, in place of this great ideal, the first proposal would substitute Wren's monument patched in a confessedly inadequate and temporary manner, and the second—Wren's monument decapitated!

A prominent citizen is reported to have compared the two proposals and to have pronounced rebuilding the better but more expensive course, and patching cheaper and therefore expedient, but to face the question merely from the aspects of safety and cost is to be blind to the ideal of complete conservation that has been growing up in England, and which has gained many adherents in recent years. As has already been pointed out in the columns of *The Builder*, the upper parts of St. Paul's Cathedral, including the inner and outer drums, the cone, domes and lantern are the choicest works of Wren's personal invention in constructive science, and as such must be preserved at all costs. It is true that they now exhibit certain structural defects, but these have been caused by the partial failure and unequal subsidence in the material of the piers below. The defects are not in themselves of sufficient importance to bring the processes of demolition and rebuilding under review as reasonable or necessary on account of the state of the work above the dome clerestory.

The proposal to demolish the dome arises solely from the desire to rebuild the eight central piers in safety and comfort for, granted the provision of a satisfactory base at the Whispering Gallery level, the repair of everything above would not present any extraordinary difficulties except, of course, in respect of scaffolding and the haulage of material to a great height.

Structural science as commonly understood is quite adequate to deal with these minor defects in a thoroughly satisfactory manner, but it is of more importance to learn whether modern structural science cannot discover a satisfactory treatment for the building as a whole, including the eight shattered piers with their disintegrated filling of rubble core.

It is noticeable that the report only deals with the question of the eight main piers and ignores the question of many other defects throughout the building.

A former inquiry into the state of the building in 1907 revealed the fact that the west towers, the transepts, and the outer walls had departed somewhat from the perpendicular, and although some of the fractures in the masonry occasioned by these movements may have been "made good" in the interval by the replacement of individual stones in the ordinary course of maintenance work, no adequate scheme has been devised for restraining further movement in the structure. The report of the Commission raises a doubt whether the connection between the defects in the piers and other defects throughout the building has been so much as considered, though it is highly important that the condition of the building as a whole as well as in its several parts should be reviewed in preparing plans for its repair.

It must be remembered that in the seventeenth century the plans for St. Paul's Cathedral were not worked out beforehand in every detail, as might be the case in a design for a modern building. Wren improvised as the work proceeded, and improved upon the warrant design as his skill and experience developed and as his attention was called first to one and then to another constructional problem.

The experienced architect building the dome and cone in an essentially Byzantine manner in reinforced brickwork could not undo and reconstruct the foundations laid and the piers built in rubble masonry in accordance with the relics of Gothic tradition that had been in vogue in his youth. No greater master of constructive expedients in architecture ever lived, but this mastery of his art was attained by Wren late in life, and was not available in the earlier stages of the building, which is the record of a succession of wonderful experiments.

By these experiments Wren himself revolutionised the standard of attainment in building, and it is in no spirit of disrespect that it must be confessed that there are grave faults in the design of St. Paul's Cathedral in connection with the disposition of masses and the application of loads.

Wren himself enunciates the proposition that loads and resistances should be proportionate to one another, but it is one thing to discover a correct theory and quite another to act upon it in face of the inertia of an old tradition.

The plan of the Cathedral is well articulated and provides masses of material in positions surrounding the central dome, which would be safely supported and abutted by them had the work been carried out from the foundations up with the idea of spreading the weight over all the supports with anything approaching uniformity.

Wren purposely made the eight main piers of the dome narrow on plan with a view to obtaining an unobstructed vista down every avenue, and in consequence the piers carrying the dome are but slightly thicker than those carrying the nave vaults. Almost all the thickening takes place on the aisle side and brings the span of the great arches to a dimension very nearly equal to the side of the octagon about which the piers are placed.

To obtain the necessary sectional area in the piers they were given a length as measured on the plan that is great compared with their width (30 ft. by 9 ft.), an arrangement that adapts them for their function of buttresses to lateral thrusts, but which unfits them for bearing a maximum load per unit of area. This defect in the planning of the piers is very greatly increased by the application of the

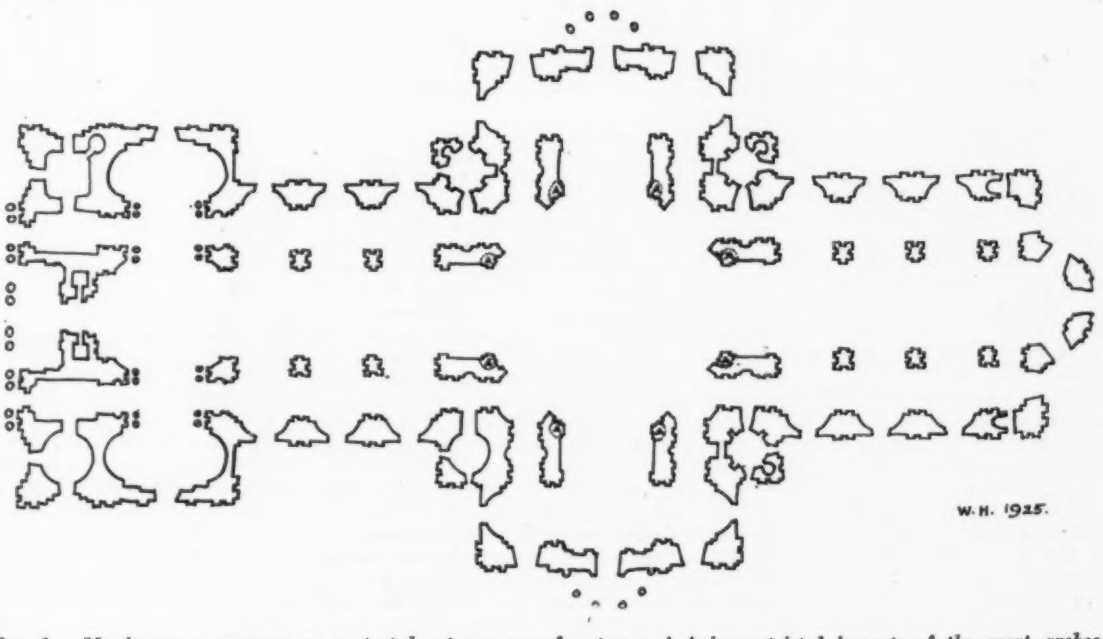


FIG. 1.—*Maximum pressures concentrated at corners of octagon A A by restricted imposts of the great arches. Thrusts which might have been conducted safely from the piers to the corner bastions by means of flying buttresses, actually traverse round-headed arches crippled by subsidence of the piers.*

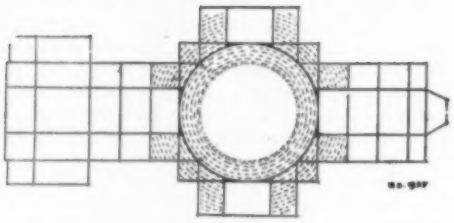


FIG. 2.—*Suggested main lines of reinforcement to be buried in concrete beams in the wall tops, and plan of reinforced concrete truncated cone to underpin the outer and inner drums and spread their weight over the surrounding masses of masonry. None of these measures would interfere with either the external or internal appearance of the building.*

loads principally upon the inner ends of the piers at one corner of each. The plan of the heavy drums of the dome only passes over the inner halves of the piers, and as the inner drum is far heavier than the outer, the piers are burdened with an extraordinarily intense eccentric load.

Still further to concentrate the weights they are collected by the pendentives ofithe dome and applied by the great arches upon a very restricted area at their springing. Instead of the arches having been designed to spread the load as evenly as possible upon the heads of the piers, they have been arranged to spring from the corners of the octagon in accordance with considerations of art or classical precedent, and not from considerations of structural fitness. The two converging arch rings actually unite some feet above springing level and are combined into a single impost that is not bonded to the adjoining horizontal courses of the pier.

In one of the piers already treated the solid stonework was shattered at the impost by the excessive pressures. The recent limitation of discussion to the consolidation of the piers by grouting and minor repairs appears, therefore, altogether too trivial in the light of the facts.

The promise of the plan with its apparently ample masses of material is negatived by the failure to connect those masses in section and detail by structural features that would be adequate to spread the weight of the dome over the whole available area of material potentially available for supporting purposes.

The piers have been described as "overloaded," and in one sense this is correct, though it would be still nearer the truth to describe them as improperly loaded, and minor repairs or even rebuilding in sound material to the same design would not obviate the reappearance of the characteristic defects and fractures which must follow the misapplication of immense eccentric loads. That a commission composed of architects and engineers of undoubted ability, after an examination extending over three and a-half years, should recommend repairs that will leave the building still statically unsound will be surprising to those who are little acquainted with the difficulties presented by the analysis of a great complex building.

The number of details which have to be taken into consideration are apt to obscure a wide view of the case, and only those who have made a special study of the behaviour of many buildings in a state of imperfect equipoise and partial decay can readily understand, when confronted with a novel problem, the probable causes of individual defects.

At present individual details are still being discussed as separate items without much reference to the importance of considering them as portions of a gigantic scheme. To grout the internal core of the main piers with cement under pressure as opposed to grouting by gravitation is a minor change of method, and the proposal of the Commission to adopt grouting under pressure has been made the occasion to revive the memory of a former Committee which met in 1912 and reported in September, 1913, to the Dean and Chapter of the Cathedral that the piers should be strutted and consolidated with cement grout.

Attention is called to the fact that at this comparatively early date Sir Francis Fox, the well-known pioneer in the use of grouting for the repair of ruinous structures, was a member of the Committee, and that although his method has been recently found successful at Lincoln, he has not been invited again to advise upon the much more difficult work of repair at St. Paul's. It is a duty and a pleasure to render honour where honour is due, but, as mentioned above, the discoveries of the last three years have raised a serious doubt whether grouting, by gravitation or even grouting under pressure, will be adequate to consolidate the piers to a sufficient degree to prevent a recurrence of the trouble.

The report of the Commission does not give any hope that the repairs by grouting therein advocated will be permanent, and in this their judgment is amply borne out by the facts. The wisdom of postponing the larger operations which they foresee will ultimately be necessary is not so apparent, and their reference to larger operations and the possible demolition of the dome and its supports may, of course, have been calculated to throw the onus of a decision upon some other person or body such as the City Corporation and their surveyor.

Between confessedly inadequate measures of repair in detail and the most unwelcome suggestion that Wren's dome should be destroyed there is, however, the possibility of the invention and adoption of a sound and thoroughly satisfactorily middle course. *The Builder* has published from time to time a series of articles descriptive of the repair of ruined abbeys and other mediæval buildings by H.M. Office of Works Historical Buildings Branch. The operations applied to ruins with large masses of masonry threatening to fall are noteworthy as the embodiment of an archæological ideal and of a new scientific development of building construction.

The ideal of conserving the ancient building with the minimum of alteration is an ideal that will find general favour, though the means employed, internal consolidation and tensional reinforcement, have been adversely criticised on occasion. But these measures are only adopted when, as in the case of St. Paul's Cathedral, it has to be admitted that minor repairs by patching will no longer be effective. The battle of scientific reinforcement *versus* repair by splicing was fought out in the case of Westminster Hall roof timbers, and there the terrible state of decay proved that the use of reinforcement was necessary, and it was resorted to with phenomenal success.

The veritable timbers of the old roof now remain safely in the positions from which they were slowly but certainly slipping when the work was put in hand.

By recognisable stages the science of building construction in its special forms for the purposes of the conservator has been created and developed in the solution of one difficult problem after another.

To the consolidation of masonry structures by grouting has been added consolidation by hand packing and tamping, and the connection of falling masses to other masses of adequate bulk by means of tensile reinforcement.

The value of these improved methods has lain in the possibility they afford of materially strengthening the ruined buildings to which they have been applied by internal and hidden supports instead of conspicuous props and stays. In some cases it has been possible to save by hidden reinforcement buildings which had already been condemned to demolition in the interests of safety, a condemnation which hangs over our greatest national monument to-day.

It is now possible to look back over a series of surveys of ruined buildings and the estimates of their deflections and eccentric loads and deduce certain laws of the behaviour of masonry in a state of partial failure. Without entering upon details, it is enough to state that any great eccentricity in the application of a heavy load to its supports is productive of cumulative movements and defects in those supports, and will inevitably destroy them unless adequate measures are taken to readjust the pressures. The speed of the destructive action is liable to fluctuation and to alterations of periods of maximum and minimum activity, but is subject to acceleration when considered over the whole period of the building's history from the cessation of the rapid initial settlement following erection to the moment of ultimate collapse.

The application of this rule to the case of St. Paul's Cathedral is sufficiently grave to justify the assumption that at some date in the near future the building will again require extensive treatment, and there are forcible reasons for reversing the decision of the Commission to commence inadequate palliative works in the first instance and allow the building to drift into a worse state before its thorough repair is undertaken. The processes of conservation are difficult and occasion grave anxiety at the present moment. The difficulties and dangers that attend the application of a considered scheme of repair will be very materially increased as time goes on, as the defects become more exaggerated, and the general character of the old work less dependable.

To determine what would be in all details an effective scheme of repair at St. Paul's, it would first be necessary to survey the building with the objects (1) of learning its size, weight and deviations from regular alignment, so that its condition of equipoise might be determined by calculation; and (2) to ascertain the nature

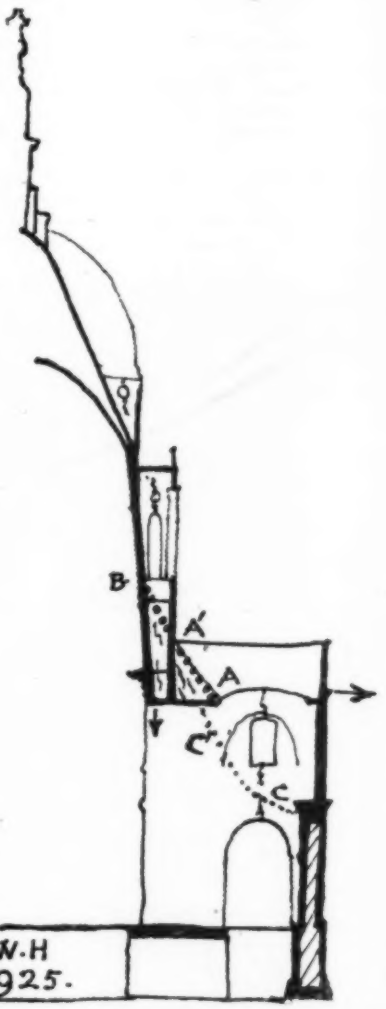


FIG. 3.—*Section through Transept showing defective buttress action of the external face wall of Transept and failure of counterfort A A¹. A new reinforced concrete cone A A¹ B would spread the weight of the drums over the back portion of the piers, unloaded at present. The dotted line C C¹ shows a continuation of the reinforced cone into the area provided by Wren over each of the aisles of the building. An encircling wing at A would control the bursting pressures. To this ring minor reinforcements would be added restraining the outward leaning wall-tops.*

of past movements, their causes and liability to continue and develop.

From the knowledge so obtained, it would be possible to devise a scheme of repair that would have a far greater chance of success than could possibly be obtained by merely strengthening some part of the defective material in the main piers and so increasing their resistance. The guiding principle upon which such a scheme of repairs would be designed would be a principle that has emerged little by little from the practices applied to historic buildings in the last decade, and which it is now possible to formulate.

The conservator of a defective building makes it his aim to discover how to unite with the least expenditure of new material masses of old material that have become disunited through faulty design or decay. He passes in review all the existing parts of the structure and regards them in the light of compressive members in a possible reinforced construction.

Having learned by his survey of the structure just how it is failing and what loads are causing either the whole or any given part to fail, he determines the position and the amount of reinforcement necessary to resist the pressures. More than that he is enabled in many cases to control and modify the application of the pressures and to check some portion of the destructive forces at the fountain head while he improves the condition of the several parts of the building to resist those which remain.

In following the example of Brunelleschi and inserting reinforcement in his dome, Wren indicates to the conservator the wise course of repair. Wren's writings teach the same lesson: "Iron at all adventures is a good caution, but the architect should so poise his work as if it were not necessary."

To depend in the first instance upon the disposition of compressional elements and to resort to tensiona lreinforcement when necessary is exactly the position of the modern scientific conservator surveying a damaged building. He will not insert reinforcement just because he "has a mania for so doing," but because the equipoise of a building can nearly always be more effectively and permanently improved by that means than by any other practicable form of repairs that will equally well preserve its beauty and usefulness.

It would be a comparatively simple matter to preserve St. Paul's dome by building permanent centering under all the arches, encasing the piers with reinforced concrete and applying buttresses to the outward leaning walls and towers, but architectural and historical fitness, the convenience of the worshippers within and of the traffic outside the Cathedral would all be sacrificed by so doing.

As long as the defects in St Paul's could be dealt with by the surveyor to the fabric and decently disguised by periodical patchings executed in a workmanlike manner there was no particular occasion for criticism; but now that the building has been publicly proclaimed dangerous, the report of the Commission admitting as much, criticisms and suggestions are permissible. An adequate scheme for repair would aim at complete conservation and there is now no reason why this ideal should not be fulfilled provided that the new works are designed on comprehensive lines and that the operations are put in hand with the requisite technical knowledge, caution and resolution.

It has been shown that the eight main piers cannot be permanently mended by patching, and that even rebuilding to the same design in better material would, in the long run, bring about the same or very similar defects, even if the retention of Wren's domes were a matter for indifference; which, most decidedly, it is not. The alternative course is that indicated by the measures successfully put in operation at Jedburgh, at Rievaulx, at Netley, and at Westminster Hall.

The existing building, with all its historical, artistic and utilitarian associations, must be added to in such a way that its dangerous movements are controlled, its materials strengthened, and the application of its loads beneficially modified by the application not of one resource of modern science—pressure grouting—but of a well-considered system of concealed reinforcement throughout.

Much useful work can be done in this way above the arches and vaults of the aisles and naves and yet out of sight under the roofs or behind the parapets of the building. By uniting the whole circuit of the walls with reinforcing bands buried deep in their substance the movements of several parts will be obviated in future. At the same time the masses of masonry surrounding the dome, which now stand comparatively idle and which only receive damaging thrusts from its weight without appreciably contributing to its support, can be harnessed together and made into a firm united base for a structure calculated to relieve the inner corners of the defective piers by spreading the superincumbent weight more evenly upon their whole area and upon the surrounding masses. On the precedent established by Wren for the support of the lantern this structure would be made in the form of a truncated cone encircling the counterforts with which he vainly attempted to spread the weight of the drums over the crowns of the great arches and semi-domes which span the spaces between the central piers. Every one of these substantial masonry spurs has been fractured to some extent, and many of them are incredibly shattered, yet the Commission's report does not mention the urgent necessity of improving the distribution of the loads by so much as putting these inverted cantilevers once more into an efficient condition to fulfil their purpose.

Common sense would indicate that in a building which is failing through excessive concentration of pressures eccentrically applied, the effective spread of the weight of the drums upon the masonry of the piers and surrounding masses should precede the actual repair of the piers. The order of operations should be (1) securely centre the main arches and shore the piers; (2) reinforce the walls of the whole building against outward pressures, the reinforcement in the walls around the central drums being calculated also to resist the lateral thrust of the new cone; (3) erect new cone to take up and distribute part of the weight of the drums; (4) repair the piers by rebuilding their interior portion in reinforced concrete, calculated to resist the still somewhat eccentric loading and conserve all ancient facework. When all this is completed another enemy to the building still remains to be attacked—coal smoke.

The limestone of the building has been steadily dissolved by the sulphuric acid discharged by the innumerable chimneys amidst which it stands, and, though slow, the decay is sure.

Every improvement in the art of burning coal without smoke production, the use of gas fires or central heating fired with coke or oil fuel, all assist in prolonging the existence of Wren's masterpiece and at the same time render life more comfortable in its vicinity.

Sheffield Society of Architects.

Mr. H. F. Traylen, F.R.I.B.A., of Stamford, lectured recently on "The Architecture of Stamford" at a meeting of Sheffield and District Society of Architects and Surveyors in Sheffield University. Mr. Traylen said there was still an ancient house in Stamford with a design embodied in the façade resembling a pair of scales and clasped hands, and he thought that was how private dwellings were then known. Mr. Traylen also related how, as surveyor to the Marquis of Exeter, he had to attend to an obligation that devolved upon the Marquis, who, as lord of the manor, was responsible for the upkeep of the ovens of certain old bakehouses in Stamford—a relic of the times when only certain people were allowed to bake bread for trading purposes. The lecturer was, he said, present on an occasion when the body of a Black Friar was found wrapped in linen, and on the breast was a parchment which, when deciphered, disclosed that the friar was entitled to choose his own confessor.

CORRESPONDENCE

Roman Mosaics in Westminster.

SIR,—With reference to the article in your issue of December 5, on the Roman Mosaics in Westminster Abbey, it may be of interest to note that a mosaic pavement of similar design to that illustrated in Figs. 1, 4, 8 and 15, is stated to exist in the Monastery of Iviron, on Mount Athos. An illustration of it is given on page 453 of Schlumberger's "L'Epopee Byzantine" (Hachette, 1896), where it is stated that the pavement dates from the foundation of the building in the time of Basil II, at the end of the tenth century.

R. E. T. MONEY SHERWAN,
General Manager, Aidin Railway, Smyrna.

Wembley, 1925.

SIR,—The complaint has been general as to the Exhibition being "so far from London." As it happens, it is practicable to shorten the distance by utilising the Brent tunnels or arches under the railway lines at the easternmost end of the grounds and within short distance of the main road, on either side, as approaches in some form or other.

At present all the entrances are at the west, points farthest away from London. Under the arrangement proposed there would be entrances also at the very nearest point to London.

Going and coming, a distance of about a mile and a-half would be saved on some of the bus or motor journeys, whilst pedestrians would have the advantage also. Even for them alone the project is worthy of adoption, especially on the north side.

The discovery was made in the investigation of the plan for an Agricultural Belt for the Metropolis, proposed in *The Builder* during the war, the establishment of a farm for London with housing, and an "Empire Farmyard" in the Exhibition itself, which happens to be situated in the belt. The whole project, however, is in embryo and merely being mooted.

O. B. I. T.

St. Paul's Cathedral.

SIR,—If your assumption be correct *i.e.*, if St. Paul's be a "National Monument," not to say our greatest National Monument, why call on the Dean and Chapter to maintain it?

Wren's latter days were embittered by the ill-treatment of the then "Powers." If the dead be conscious what will be his feelings regarding the meanness of the nation towards a work into which he put all his soul and all his energy?

The expenditure by the Central Government is £2,000,000 per day!

A. HENTHORN STOTT.

Manchester.

Washington Cathedral.

Mr. Allan D. Reid, architect, of 5, Verulam-buildings, W.C., writes to point out the similarity between Washington Cathedral (illustrated in our last issue), as now being built under the direction of Messrs. Frohman, Robb & Little, architects, and the design of the late G. F. Bodley, R.A., and Mr. H. Vaughan, of Boston, U.S.A. We believe Messrs. Bodley & Vaughan submitted a joint design in the first competition, but exactly how far the building we illustrated follows their design we do not know.

Westminster Bank, Ltd.

The iDirectors of Westminster Bank, Ltd., have declared a final dividend of 10 per cent. in respect of the £20 shares, making 20 per cent. for the year; and a final dividend of 6¼ per cent. on the £1 shares, making the maximum of 12½ per cent. for the year. The dividends will be payable (less Income Tax) on February 2.

A Lead Roundel; "A Dancing Faun."

Angels carved in Granite. MRS. PHŒBE STABLER, Sculptor.

THE WORK OF MRS. PHŒBE STABLER

By T. P. BENNETT, F.R.I.B.A.

CONCRETE as a decorative material has recently received considerable attention, and one of the artists who have attracted notice in this connection is Mrs. Phœbe Stabler.

Several of Mrs. Stabler's concrete heads have been exhibited at the Royal Academy, and their modelling and texture have alike marked them out from more commonplace work. They possess a distinction and individuality which are extremely fascinating and which make one wish to see more of her work. She has experimented in cast concrete and in carved concrete, finding that by judicious handling of the material during setting a large amount of the manual labour connected with carving can be eliminated, while the resulting figure has an individuality which is not possessed by other materials. It is interesting to discover that Mrs. Stabler's early essays in concrete were more or less accidental, and were carried out with the roughest of aggregates and without any of the adventitious aids which some of the richer materials might have given. Particular mention must be made of a carved head illustrated herewith (on p 98), which was the first head in concrete ever to be exhibited at the Royal Academy. This head possesses a sense of decoration and a freedom of expression which denote its great possibilities for use in connection with building. While this head was displayed as a studio group, it is much more suggestive, and was indeed intended to be an example of pure decoration.

Of equal distinction is the hooded head, also in concrete, on this page. This head is treated in a less playful manner than the first. It is more severe in its outline, more staid, yet it possesses a charm which cannot be denied.

These essays in concrete lead to a certain curiosity with regard to Mrs. Stabler's accomplishments in more usual materials, and it is not surprising to find that her decoration in stone and lead have the qualities which denote exceptional ability. A small lead roundel for a wall garden is illustrated on p. 104. It is a dancing faun bought by Sir Robert Lorimer and fixed in his garden. The faun has a baby impishness which seems somehow to convey the attractive, mischievous qualities which one discovers in the child mind; yet apart from its human appeal it is studied as a serious piece, and a very successful piece, of decoration. Another garden figure is illustrated on p. 97, which was also executed in lead, and has been erected in a garden near Glasgow. This study is one which is intended to be purely imaginative, intended to add to the delight of green surroundings and a formal setting.

Other garden figures have followed those enumerated above, and have taken many forms. There is a small child (called "Shy") seated on a pedestal, which possesses, in a marked degree, the qualities of a child which appeal to everyone. In another garden there is a small standing figure on a pedestal in the centre of a circular paved space, and a figure in bronze on a plain pedestal base, against a wall, which has a vitality and sense of movement which are extremely attractive.

A Barrie-like whimsical fancy has been shown in odd little dragons and other small figures suitable for all sorts of occasions, and having a charm of their own which is the *raison d'être* of sculpture of its kind. Mrs. Stabler's sense of decoration in the use of the figure is further shown in four angels (all alike) cut in granite and used at angles of a tomb. These figures are noteworthy, not merely for the front but for the back views, where the handling of the wings has been particularly ably treated (see p. 104).

Mrs. Stabler has, however, executed some large works, in addition to the foregoing figures and fancies, and indeed during her training made a special study of decorative work on a big scale. A design for a spandril belongs to this early period. While perhaps not displaying the complete freedom of later work, it possesses an individuality which is quite unmistakable. This individuality and sense of decoration is further displayed in a triptych modelled in relief.

Mrs. Stabler began woodwork and modelling when she was about 14, tools always having possessed a great fascination for her. She studied under Charles Allen at the Liverpool University, and his influence is perhaps discernible in some of her work. She was for a while a student of Augustus John, who taught drawing at Liverpool University. She won a travelling scholarship, and had the option of studying in Paris or London. She chose London and worked at the Royal College of Art under Professor Lanteri.

An Example of Mrs. Stabler's Work.

Head Carved in Concrete.
MRS. PHŒBE STABLER, Sculptor.

Leighton House.

At a recent meeting of the Kensington Borough Council, a letter was read from the Kensington Committee of Civic Art, stating that, at a recent meeting of the Committee, held at the residence of Sir Aston Webb, R.A., regret was expressed at learning of the possibility that Leighton House may be closed to the public, and the view was put forward that the Council should be urged, in the interests of the Borough, to consider the practicability of taking over the house as an art museum, which could be made a centre where the arts could be represented, with lectures, demonstrations, and other forms of art activity.

Head Carved in Concrete
MRS. PHŒBE STABLER, Sculptor

THE BUILDING OF THE ABBEY CHURCH OF WESTMINSTER

On January 12 Mr. Lawrence E. Tanner, M.A., read a paper on this subject before the Surveyors' Institution. In the course of his paper Mr. Tanner said Edward the Confessor had spent his early years as an exile in Normandy, and a Norman he remained till the end of his life. During his wanderings in Normandy he believed himself to have been miraculously preserved by the intervention of St. Peter, and, in order to show his gratitude, he vowed that, if ever he should be restored to the throne of England, he would make a pilgrimage to Rome. But, when on his accession he announced his intention to his Council, they were filled with dismay, and eventually persuaded him to despatch an embassy to the Pope to ask for absolution from his vow. The Confessor then determined to rebuild the church and monastery at Westminster, which, it would appear, had fallen into some neglect, and the progress of the work became an absorbing interest of the last fourteen years of his reign. Warned of his death the King hurried on the building of the Abbey Church, which it was his great desire to see completed. The building was ready for dedication on Holy Innocents' Day, 1065.

The actual remains of the Confessor's Church and of the monastic buildings were not of very great extent. The most considerable portions that remained were the range of buildings stretching from the Chapel of the Pyx to the entrance of Little Dean's Yard (now known as the Norman Undercroft), some windows in the school above, the lower part of the refectory wall, and a few fragments built into later work. But the most interesting remains were those of the church itself. They were three bases of columns (which were some feet below the present flooring just in front of the high altar) and the foundations of the original apse at the east end. These foundations were partly underneath the Confessor's Shrine, and were uncovered in 1910.

They also possessed two not very coherent contemporary accounts, and the well-known representation in the Bayeux needlework, of which last it should perhaps be remarked that, although the latest authorities believed it to be English work, there was no evidence that the worker had ever seen the church, and it was probably worked either from description or from imagination. They were thus driven back very largely upon inference, but from these hints and fragments they knew with tolerable certainty what the Confessor's Church looked like.

The first thing to note, and it perhaps caused some surprise, was its size. There could be very little doubt, from the bases of the pillars mentioned above, which gave them the width between the bays, and also from the fact that the centre line was the same as that of the church to-day, that the ground plan of the Norman church was not very much smaller than that of the present Abbey. It was far the largest church hitherto erected in England, the solitary outpost, as it were, of the great Norman age of church building which was to follow. Dean Robinson, who made a special study of this period of their history, used to say that he believed that it must have greatly resembled Norwich Cathedral, and it was now well established that the conception of it was based upon the Norman Abbey at Jumièges.

In the next place they knew that, as was common in the Norman churches in France, there was a central tower and a rounded apse at the east end. There were also two transepts, although these were rather shorter than those afterwards built by Henry III, and a nave of eight bays, which ended just west of the present west cloister door. The choir was just under the central tower, and must have been much on the site of the present one, but perhaps a little further to the east. It would, therefore, be seen that the Norman church must have been somewhat shorter than the present church. It would thus give more room for the nave of the old Saxon church, which they knew was left standing and used by the monks while the new church was building. They had left unnoticed one very important feature which was retained by Henry III when he came to rebuild the church. This was the crossing or central space under the tower, with the choir standing under and to the west of it, an arrangement not uncommon in Norman churches (*e.g.*, Reims), but most unusual in churches built at a later date. This curious arrangement, which struck anyone on visiting the Abbey, was thus directly owed to the Confessor's church, and it seemed probable that it was retained because Westminster was a coronation church. For it was here that the "theatre," as it was called, was set up, on which was placed the Coronation Chair, and both the homage and the crowning took place in this central space. From the Confessor's Church was also probably inherited the vast upper Abbey in the Triforium, of which few people knew the existence. It reproduced the ground plan of the ambulatories and chapels beneath. But its intended use remained a problem. Finally, the general arrangement and setting out of the monastic buildings had remained the same, and was probably itself a reconstruction of the plan of the Saxon monastic buildings on the same site. They could thus picture to themselves the Norman Church, not as a small and primitive structure, but as a great and noble church, not unworthy to rank with Norwich or with Gloucester. From 1065 to 1220 the Confessor's Church remained practically untouched. The monastery grew in wealth and power, and the abbot became one of the few who were privileged to wear the mitre and the full insignia of his rank. But although William and his successors received their crowns at Westminster and dwelt in the palace near by, yet, when they were gathered to their fathers their remains were laid elsewhere. William at Caen, Rufus at Winchester, Henry I at Reading, Stephen at Faversham, Henry II and Richard I in noble tombs at Fontrevault, and John at Worcester (the only English king who is represented on his tomb in the habit of a monk).

Professor Lethaby had recently pointed out that Westminster perhaps owed even more to Amiens than to Reims, and that it also owed something to the St. Chapelle at Paris. He further pointed out that the name "Reyns" might be derived from Raines in Essex, and that it was not uncommon as an English name at this date. He concludes: "While admitting to the fullest degree study of French sources, all at Westminster seems to me so thoroughly re-thought and rehandled, that I have no doubt that the foreign conceptions passed through the mind of an English master"; and again, "the result is triumphantly English."

It was a curious fact that the vaulting of the nave was begun at the west end and gradually continued eastwards. The last bay to be vaulted was almost over the choir screen and was completed by Abbot Islip in 1504–6, just about 230 years after the work to which it was linked. At last the great Abbey Church was complete. But even now there was no pause in this extraordinary story of constant building. John Islip was the last of the great mediæval abbots. He not only built the beautiful Chantry Chapel in which he lies buried, but he was abbot when the last great period of building was undertaken. In 1503 Henry VII pulled down the old Lady Chapel and began the wonderful chapel which bears his name. It was completed in 1519. "The stateliest and daintiest chapel in Europe," as Bacon called it. There was no question of iron ties to keep the structure in place. The superb roof was planned with an audacity and sureness of touch which made it perhaps "the most wonderful work of masonry ever put together by the hand of man." The great windows were curved at will, and the walls were covered with sculptured figures and devices. But beautiful as it was the chapel was not now as originally planned. It was originally intended to place the tomb of Henry VI in the chapel at the east end and the tomb of Henry VII in the centre of the chapel itself, and for that reason the stalls were "jammed tight up to the arches." But poor Henry VI, who was disregarded in his life, and who, in the battles of the Wars of the Roses was usually left under a tree near by "because he was better at praying than at fighting," became, like Edward II, of value after his death. The tomb of a saint was of commercial value in mediæval times and so, though Westminster went to law about it, eventually Windsor received his body, and the space in the centre was left empty. The tomb of Henry VII with its grille, now a dull bronze, but once a thing of glittering beauty, was placed at the east end. It blocked the radiating chapels which, designed for the tombs of his successors, remained unfilled until later days. The chapel had lost, too, its beautiful stained glass. They were the pattern for the windows of King's College Chapel, Cambridge. But it is still a Royal Chapel, and no one might be buried nor may a monument be erected there without royal sanction.

It is the irony of fate that the Abbey church stood complete and supreme in all its beauty for only twenty years (1519–1540). In the latter years the Monastery was dissolved and the spoliation of its treasures began. Thenceforth the task of its architects had been to preserve what remained. Throughout the seventeenth century work was in progress on its outside to repair the ravages caused by the London atmosphere. This work had been going on ever since. Fortunately, at present, they were faced with no such problems as had to be faced and overcome at Winchester, Lincoln and elsewhere. What had been accomplished at Westminster had been the remarkable feat of replacing the decayed exterior stone by stone. This had been the work of Sir Christopher Wren, Sir Gilbert Scott, Professor Micklethwaite, and Professor Lethaby. The result was that there was scarcely a single original patch of stonework on the outside. "Externally . . . the church was a copy, not by any means faithful, of the original." The western towers were the last great addition to the Abbey Church. These were traditionally supposed to have been designed by Wren, but were actually designed and built by his pupil Nicholas Hawksmore in 1734–40. Architecturally, he supposed, they were indefensible. And yet, perhaps, it was a case of unfamiliarity breeding contempt. He sometimes wondered if those who condemn them so glibly had seen them almost daily, year in year out, under every condition, had seen them, for instance, outlined against a bright orange sky on a November afternoon, or from the Cloisters at midnight on a summer's night, gleaming snow-white, in the moonlight with every harsh line smoothed away, or yet again on a spring morning across the young green of the trees in Dean's Yard. That was no doubt a thoroughly unsound way to judge them. And yet, seen thus, they did become a part, and no inconsiderable part, of that wonderful Abbey Church which "ever surprised us by its loveliness," and was so infinite in its variety, so mysterious in its problems, and so inexhaustible in its interest.

The Architectural Association.

The Year Book and Diary of the Architectural Association for 1925 has recently been published. It contains, apart from the Official Scale of Charges of the R.I.B.A., a quantity of technical data arranged alphabetically, which must be invaluable to architects. The Diary itself is conveniently arranged two days to a page, and at the back a list of members, together with other useful information, is given of the Architectural Association.

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ILLUSTRATIONS

Chelsea Housing Scheme.

This scheme, for the Chelsea Borough Council, is situated in Hortensia-road, Chelsea, on a site of approximately 1¼ acres. It consists of fifty-six flats arranged in three blocks, to form a kind of courtyard.

The accommodation is as follows:—

In the larger flats is a living room, three bedrooms, scullery-kitchen, larder and bath room (containing a w.c.) and a combined bath and lavatory basin, an open lobby and large cupboard and coal store. The smaller flats have one less bedroom. The range has been provided in the living room, but a gas cooker is installed in the scullery, as it was recognised that there is a strong preference among working-class women for gas cooking. The scullery is fitted with a gas-heated copper and an enclosed dresser. Hot water is supplied from a central boiler under the middle block, which supplies bath, sink and lavatory basin in each flat. The sinks are fitted with special check-taps to prevent waste of water. The hot water scheme was designed by Mr. Walter W. Nobbs.

The buildings are faced with hand-made, sand-faced, multi-coloured bricks in different colours, and the roof is covered with hand-made tiles. The cornices and the surrounds of the entrance doors are made of artificial stone. The stairs are of concrete and the floors of light hollow tiles, constructed to take a load of 86 lbs. per sq. ft. The passage and the floors of the kitchens and bath-rooms are of jointless flooring, but the living room floors are of boards nailed to breeze concrete. The walls of the staircase are finished in cement rendering and painted, and the walls of the flats are distempered. The roads are constructed of patent reinforced concrete blocks, but the roads taking lighter traffic are of tar-macadam.

The contract was entered into in July, 1924, and amounted to £42,000, but it is anticipated that considerable economies will be effected and that the scheme will cost slightly under 1s. 5d. per ft. cube, including the roads and boundary walls.

The general contractors are Messrs. William Moss & Sons, Ltd., London and Loughborough; hollow tile floors, Messrs. William Moss & Sons, Ltd.; bricks, Messrs. Thos. Lawrence, Bracknell; tiles, Messrs. William Brown, Redhill; artificial stone, Messrs. Malcolm McCloud & Co., Ltd., London; central hot water system, Messrs. G. N. Haden & Sons, Ltd., London; electrical installation, Messrs. Ozonair, Ltd., London; jointless flooring, Messrs. Burkenite, Ltd., London; and roads, Spagnolette Grunspan.

The architects for the scheme are Messrs. Percy Tubbs, Son & Duncan, F. & AA.R.I.B.A.

Premises, Moorgate-street.

This building replaces an existing building which has been occupied by Messrs. J. B. Cramer & Co. for many years. The site is very confined with a frontage of 17 ft. 2 in. only. The building will be used as showrooms for pianos on all floors, with the addition of two practice rooms—one on the fifth and one on the sixth floor. The front is to be faced with Portland stone, and the building will be constructed as a steel frame building throughout. Special permission has been obtained from the London County Council to carry the north external wall of the fourth, fifth and sixth walls on steel, to avoid thickening the existing party wall, as would otherwise be necessary to accord with the 1894 Act. Special sanction has also been obtained to construct the party wall between 46 and 44, Moorgate, as a joint steel frame party wall. These two concessions will add considerably to the amount of space available in the property. The main staircase will be constructed of oak throughout, and a 15 cwt. piano-passenger lift will be installed. In designing the elevation an effort has been made to reduce the apparent height of the extremely narrow front, and at the same time to give a maximum amount of daylight. Messrs. Leslie & Co., of Kensington, are the contractors; lifts, Messrs. Waygood Otis; steelwork, Messrs. Dorman, Long & Co.; heating, Mr. Wm. Freer; lighting, Messrs. Troughton & Young; wrought and cast iron ornaments and lead work, Messrs. Passmore Art Workers. The architects are Messrs. T. P. Bennett & Hossack, F. & A.R.I.B.A.

Anglo-South American Bank, Ltd.

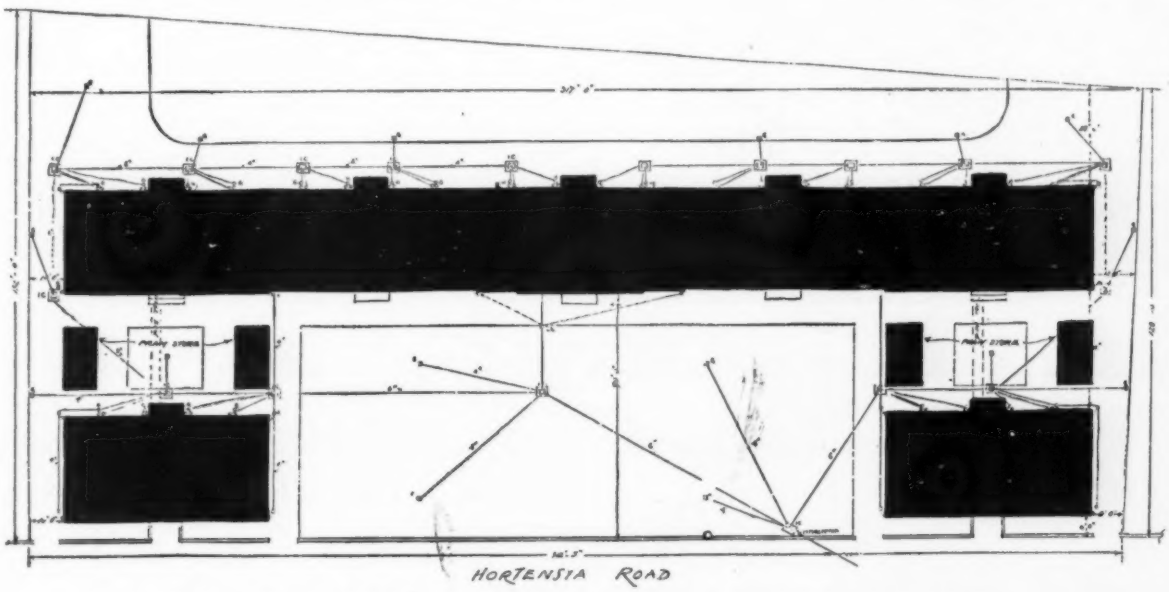
These premises, at Market-street, Bradford, have recently been completed, the bank itself occupying the ground and first floor, as well as a large wing at the back. The lower portion of the building is faced with polished grey granite, with a base of "Royal Blue." The remainder of the front is faced with stone from Ringby, near Halifax. The outer doors and the ground floor windows are of bronze. The banking hall itself is lined with "Vein and Second Statuary" marble, relieved by "Sienna" strips and "Tinos" green corners and pilasters. The public space floor is also of marble and the banking hall ceiling is of fibrous plaster. The bank fittings are of mahogany, with bronze grilles and desk lights.

The first floor is used as private offices and reception rooms, and those are all panelled from floor to ceiling in mahogany. The floors are covered with parquet. The staircase balustrades and lift enclosures are of wrought iron with bronze enrichments.

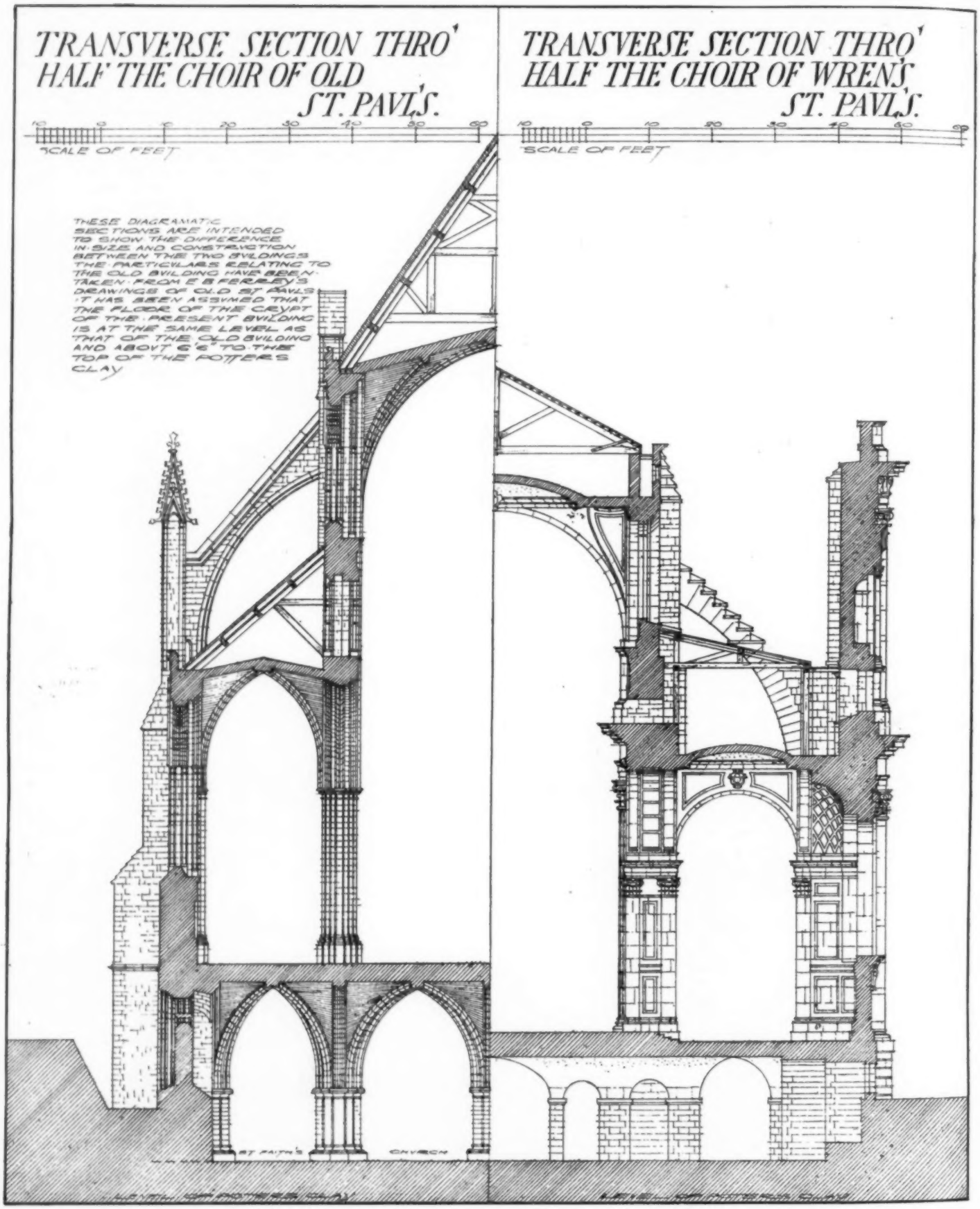
The architects were Messrs. W. J. Morley & Son, F.R.I.B.A., of Bradford, and the following is a list of the contractors: Mason's work, Messrs. M. Booth & Sons, Bradford; marble, Messrs. Fenning & Co., Ltd., London; asphalte, Messrs. Tunstall's Rock Asphalte Co., Ltd., Leeds; steel work, Messrs. H. Barrett & Sons, Ltd., Bradford; fibrous plaster, Messrs. G. & A. Brown, Ltd., London; granite, Messrs. W. Kirkpatrick, Ltd., Manchester; locks, &c., Messrs. Charles Smith, Sons & Co., Ltd., Birmingham, and Messrs. J. Mollett, Ltd., Bradford; fire-resisting floors, Messrs. Concrete, Ltd., Leeds, and the Kleine Patent Fire-Resisting Flooring Syndicate, Ltd., London; wall tiling and flooring, Messrs. Alfred Whitehead, Ltd., Leeds; sanitary fittings, Shanks & Co., Ltd., and Adamsez, Ltd.; steps and landings, Art Pavements and Decorations, Ltd.; safes, Chatwood Safe Co., Ltd.; lifts, Waygood-Otis, Ltd., and Smith, Major & Stevens, Ltd.; hot-water heating, Rosser & Russell, Ltd.; electric fittings, Faraday & Son, Ltd., and F. & C. Osler, Ltd.; art metal, bronze doors, bronze and steel casements, Crittall Manufacturing Co., Ltd.; and inter-communication telephones, The Relay Automatic Telephone Co., Ltd., London.

Rebuilding of Bank Premises, Faversham.

Mr. Ernest Barber, M.S.A., of Margate, is the architect for the rebuilding scheme at Barclays Bank, Faversham. One of the photographs shows the old building, which has been restored practically to what was conceived to be its condition before it was converted into a shop. The small gable building at the side has not been touched except to put it in proper condition. Mr. A. Foster is architect to Messrs. Barclays Bank, Ltd.



Chelsea Housing Scheme. MESSRS. PERCY TUBBS, SON, & DUNCAN, Architects.


TRANSVERSE SECTION THRO' HALF THE CHOIR OF OLD ST. PAUL'S.
SCALE OF FEET
TRANSVERSE SECTION THRO' HALF THE CHOIR OF WREN'S ST. PAUL'S.
SCALE OF FEET
THESE DIAGRAMATIC SECTIONS ARE INTENDED TO SHOW THE DIFFERENCE IN SIZE AND CONSTRUCTION BETWEEN THE TWO BUILDINGS THE PARTICULARS RELATING TO THE OLD BUILDING HAVE BEEN TAKEN FROM E B FERRELY'S DRAWINGS OF OLD ST PAULS IT HAS BEEN ASSUMED THAT THE FLOOR OF THE CRYPT OF THE PRESENT BUILDING IS AT THE SAME LEVEL AS THAT OF THE OLD BUILDING AND ABOUT 6'6" TO THE TOP OF THE POTTERS CLAY

Diagrammatic Section through the Choir of Old and New St. Paul's, (*See p.* 101.)

From a Drawing by MR. W. G. ALLEN.

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THE PUBLIC SPACE AND COUNTER.

ONE OF THE WAITING ROOMS.

New Premises for the Anglo-South American Bank, Bradford.

MESSRS. W. J. MORLEY & SON, FF.R.I.B.A., Architects.

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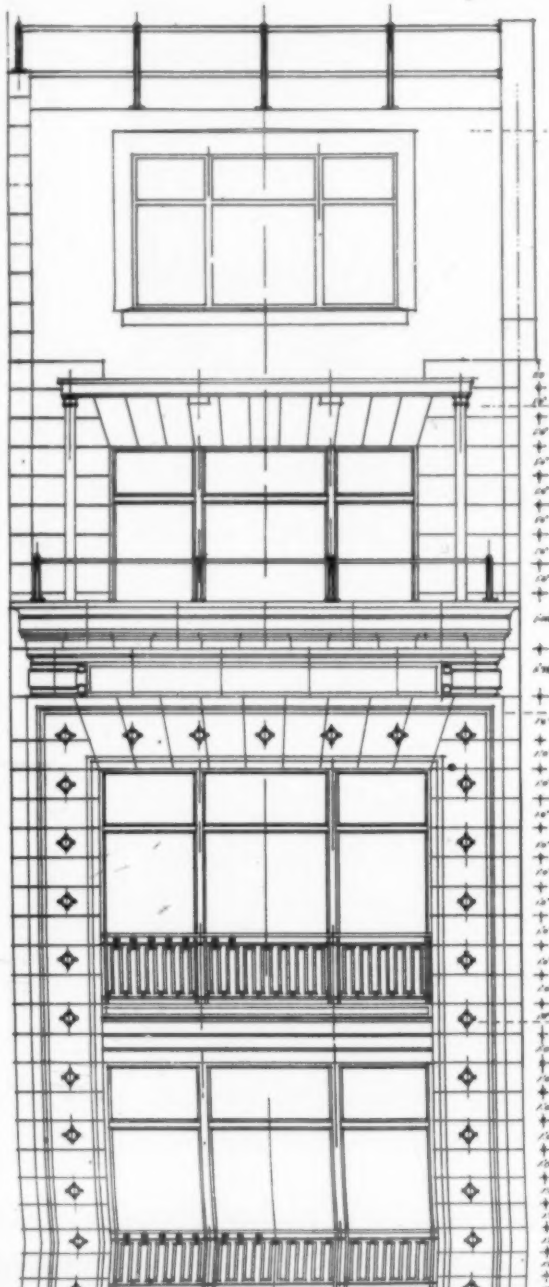
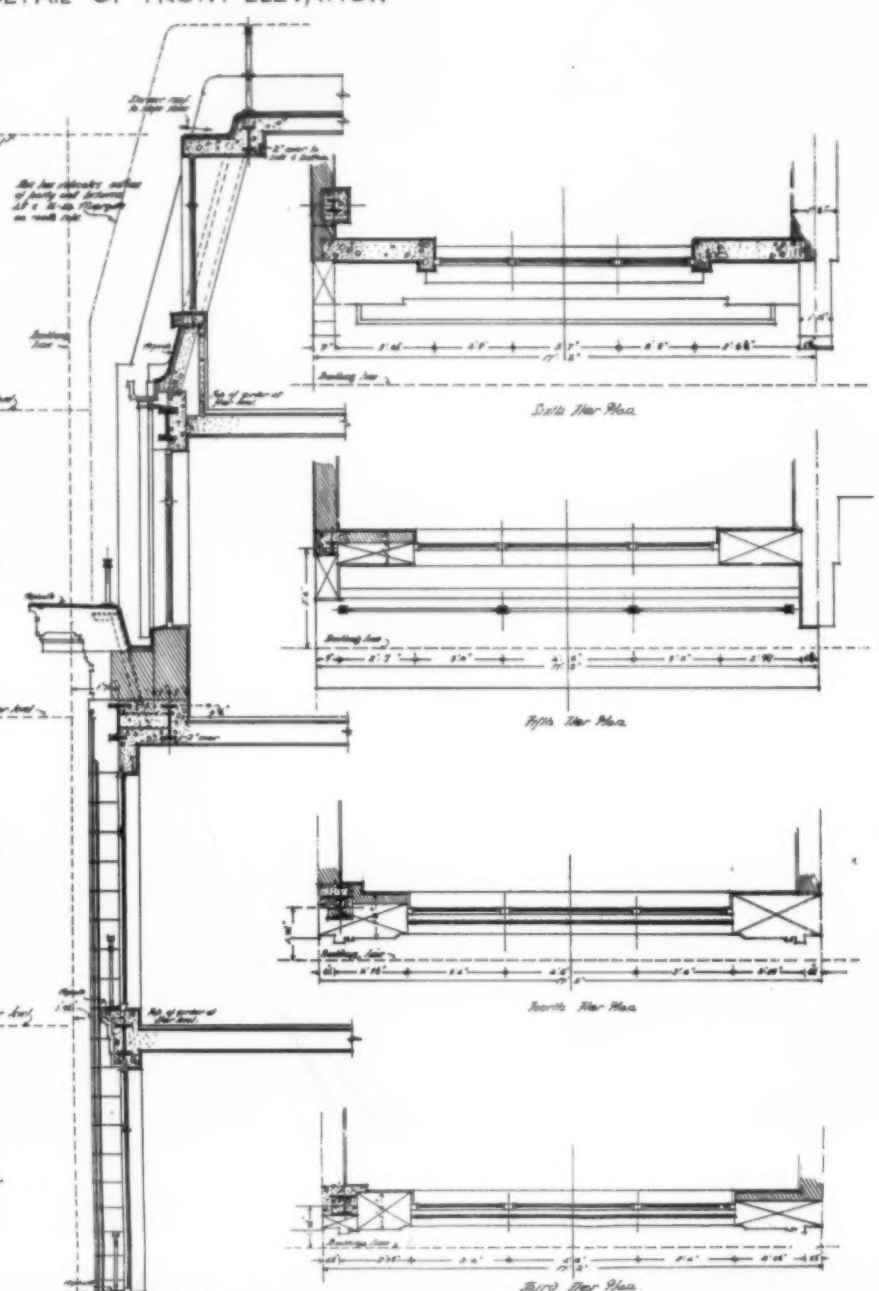
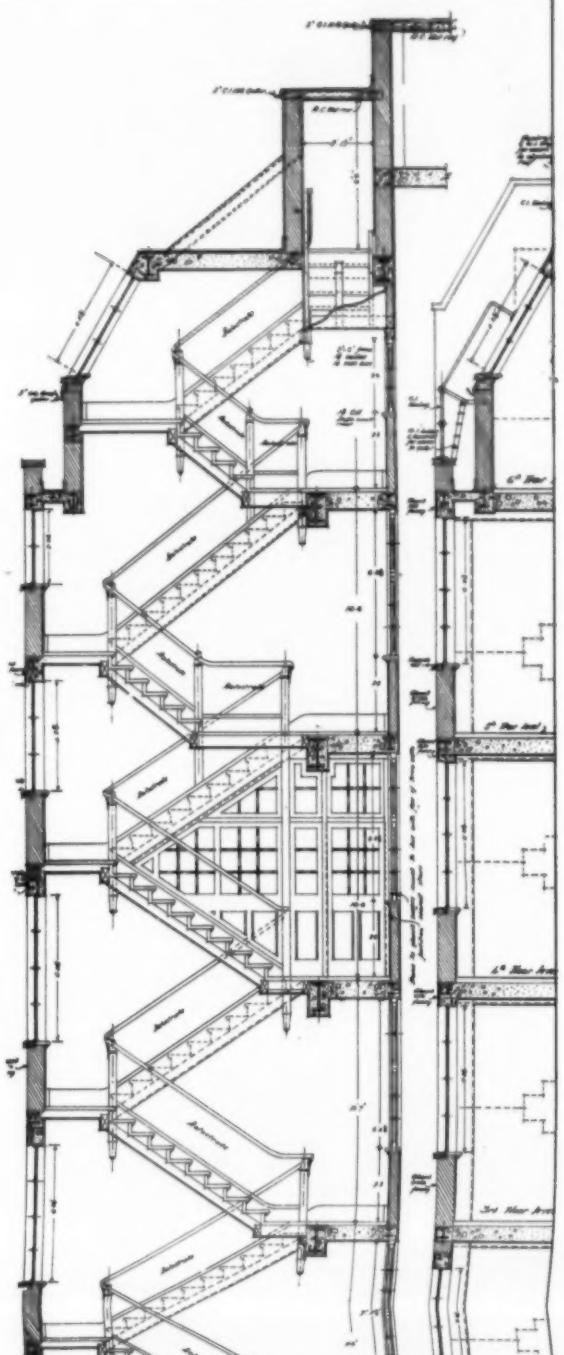
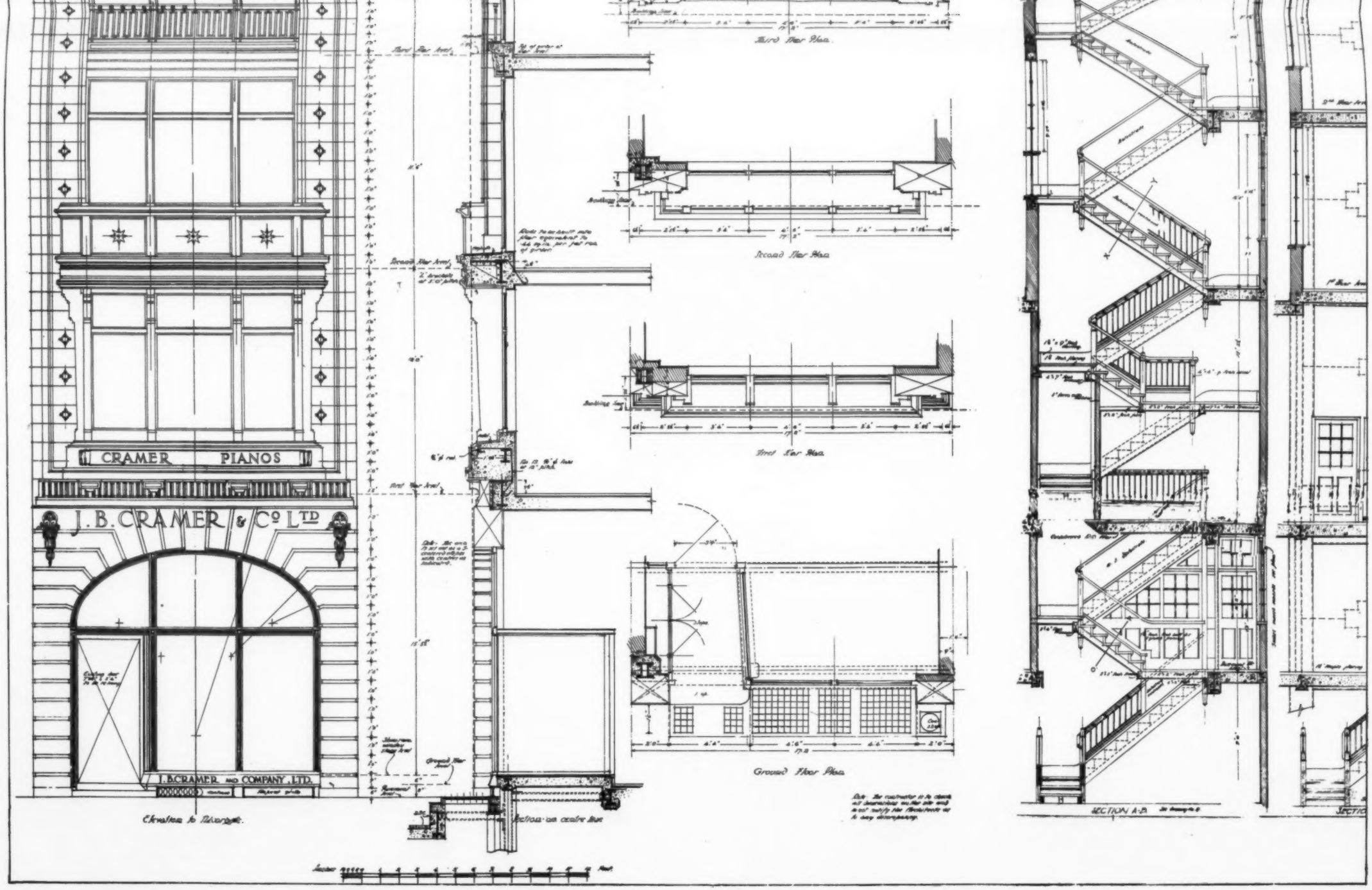
No. 46. MOORGATE. E.C.2.

DETAIL · OF · FRONT · ELEVATION

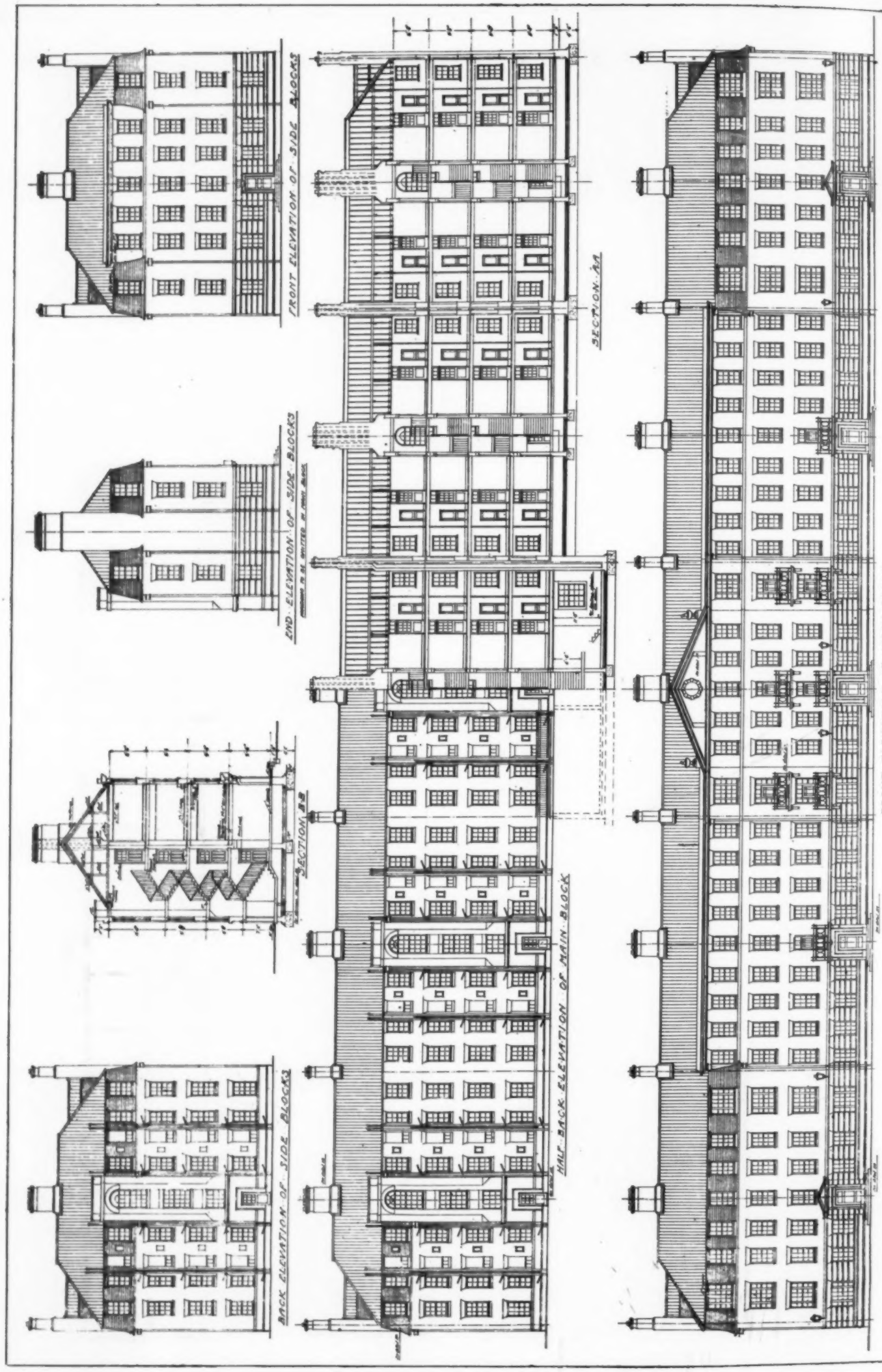




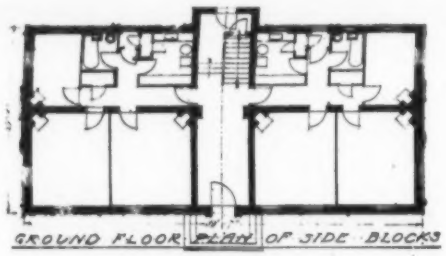




PREMISES: No. 46, MOORGATE, E.C. MESSRS. T. P. BENNETT & HOSSACK, F. & A.R.I.B.A., ARCHITECTS.

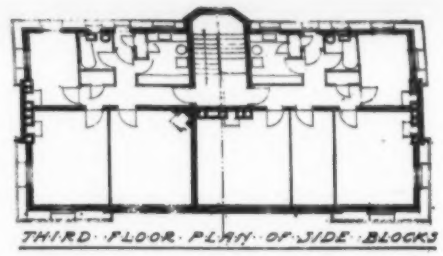

FRONT ELEVATION OF SIDE BLOCKS
END ELEVATION OF SIDE BLOCKS
SECTION AA
SECTION BB
HALF BACK ELEVATION OF MAIN BLOCK
BACK ELEVATION OF SIDE BLOCKS
FRONT ELEVATION OF MAIN BLOCK

FRONT ELEVATION OF MAIN BLOCK

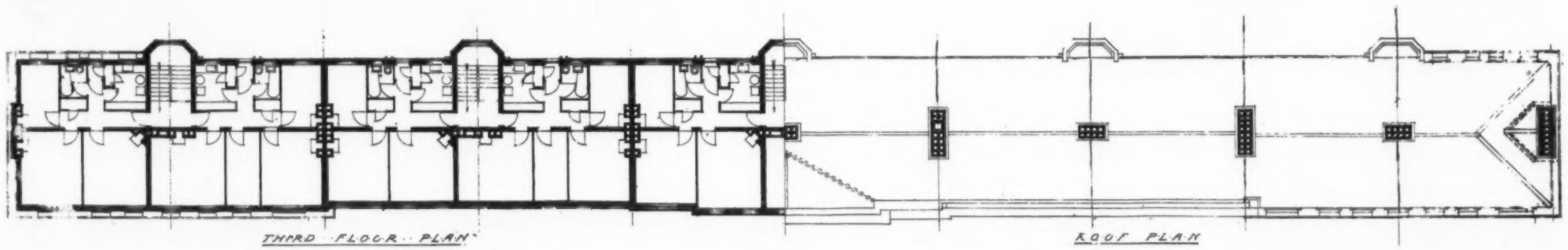


GROUND FLOOR PLAN OF SIDE BLOCKS

CHELSEA HOUSING SCHEME (HORTENSIA ROAD). MESSRS. PERCY TUBBS, SON & DUNCAN, ARCHITECTS.

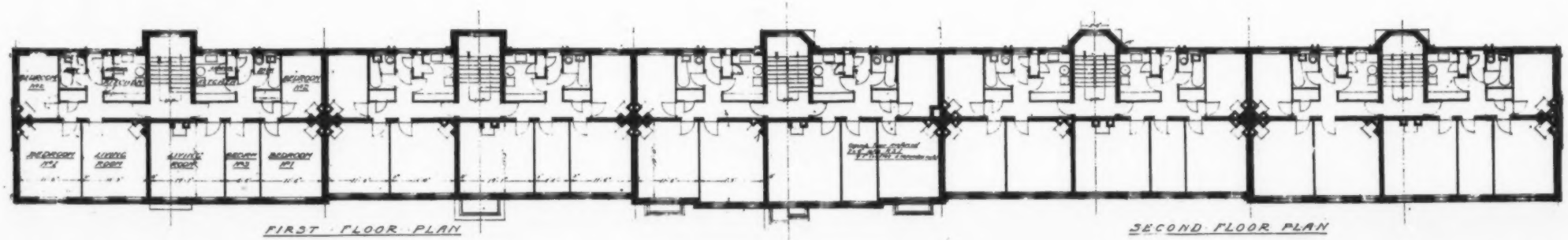


THIRD FLOOR PLAN OF SIDE BLOCKS



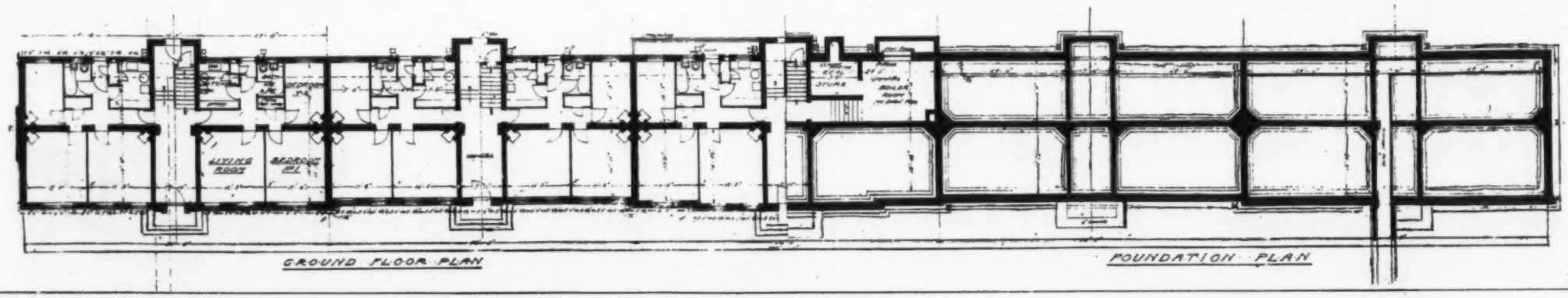
THIRD FLOOR PLAN

ROOF PLAN



FIRST FLOOR PLAN

SECOND FLOOR PLAN



GROUND FLOOR PLAN

FOUNDATION PLAN

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New Premises in Bradford for the Anglo-South American Bank, Ltd.: The Market-street Front.

MESSRS. W. J. MORLEY & SON, FF.R.I.B.A., Architects.

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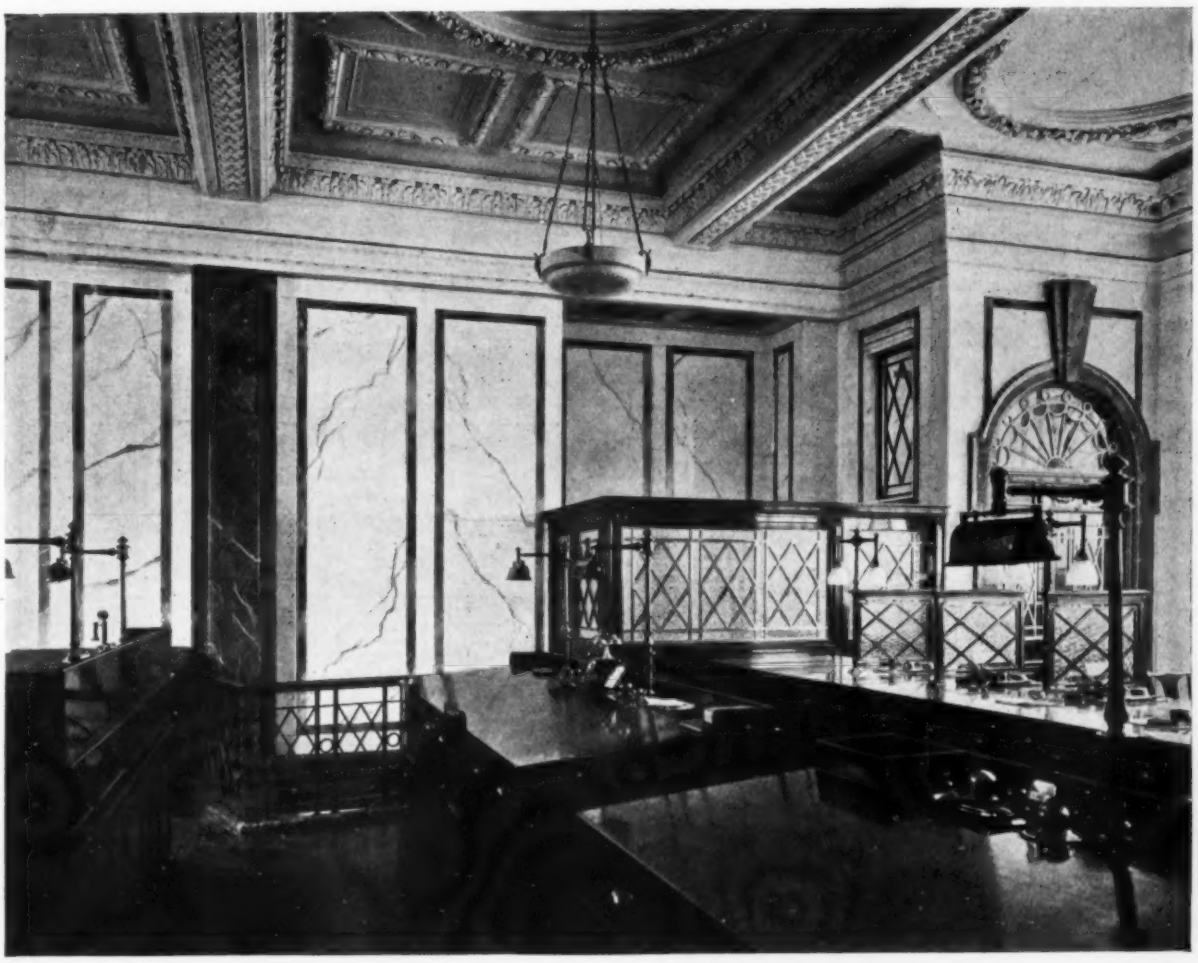
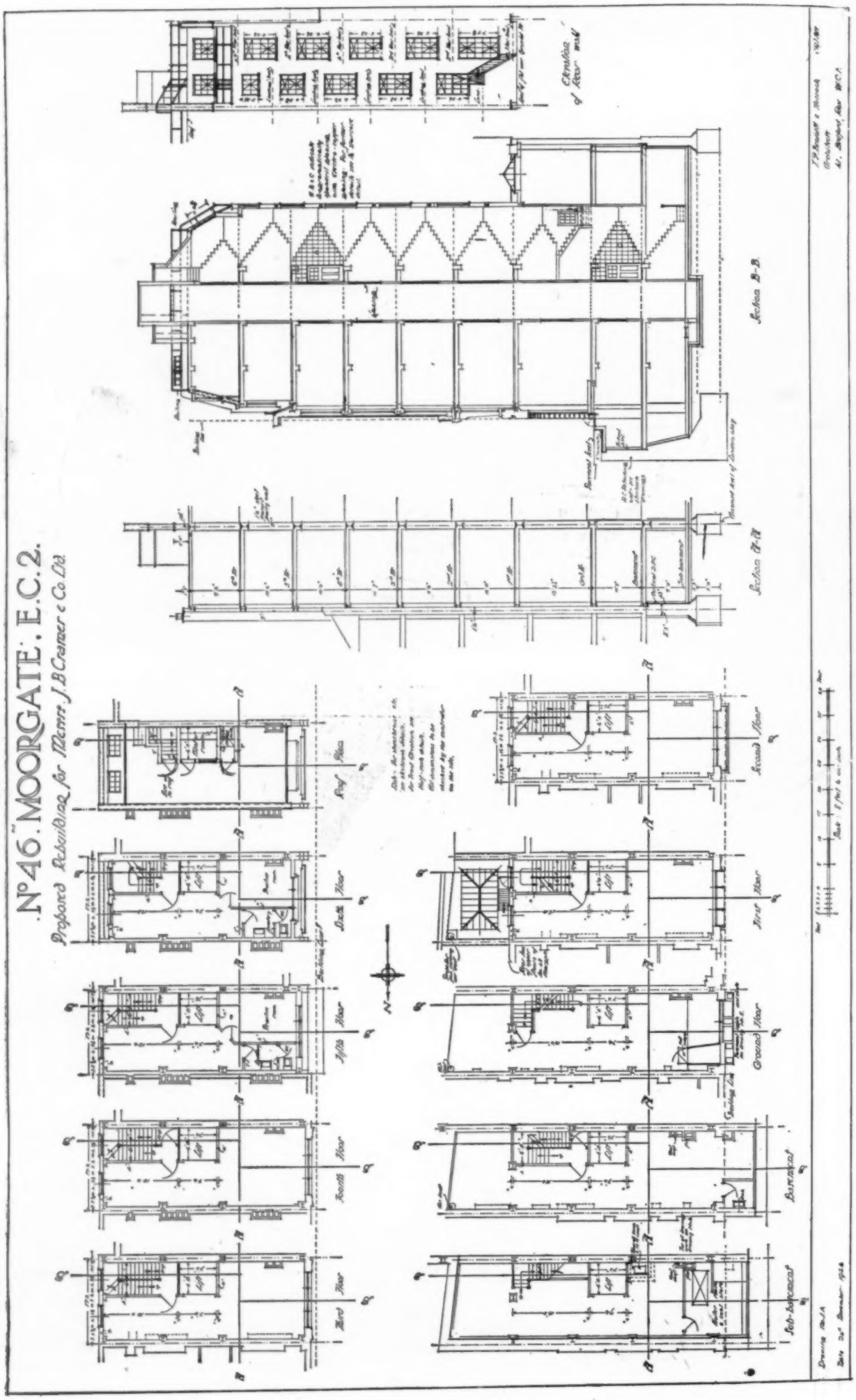
THE PUBLIC SPACE, SHOWING ONE OF THE ENTRANCES.

ONE OF THE BRONZE ENTRANCE DOORS.

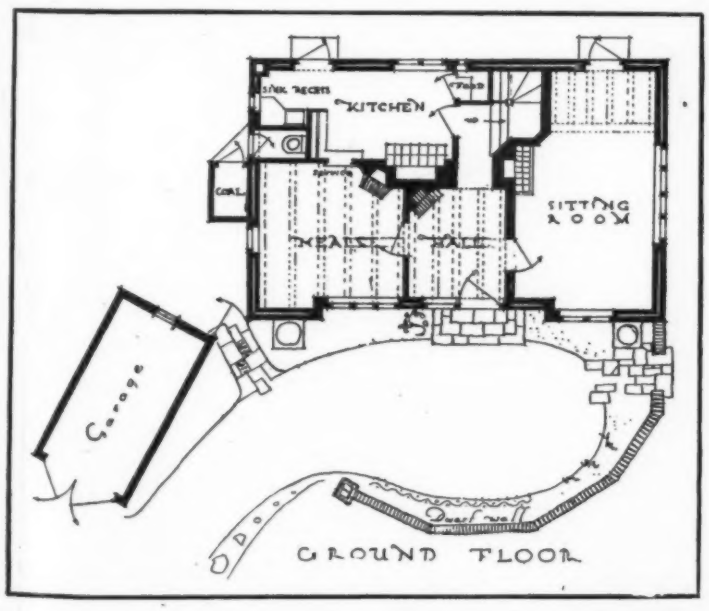


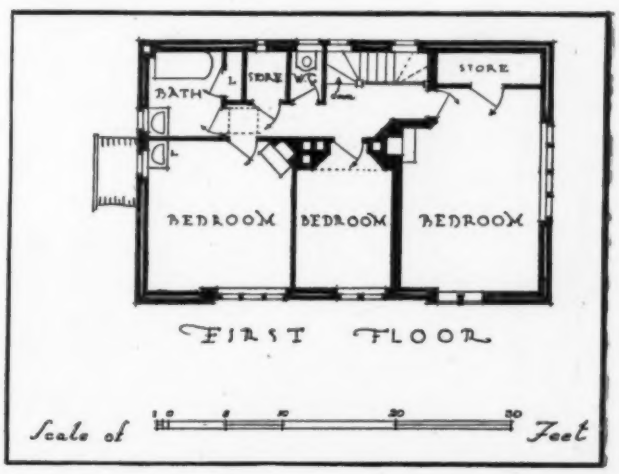
A PORTION OF THE BANKING HALL.

New Premises for the Anglo-South American Bank, Bradford. MESSRS. W. J. MORLEY & SON, FF.R.I.B.A., Architects.



MESSRS. T. P. BENNETT & HOSSACK, F. & A.R.I.B.A., Architects. (See p. 107.)





"Fonthill," Coulsdon.

MR. SYDNEY E. CASTLE, M.S.A., Architect.

[This house has just been completed, and overlooks a beautiful view from the top of a hill. The work is in mottled facing bricks and hand-made tiles, and the half-timber work is in solid oak. The builders were Messrs. W. H. Frewing, Brighton-road, Purley.]

AFTER REBUILDING.

BEFORE REBUILDING.

Rebuilding of Bank Premises, Faversham.

MR. ERNEST BARBER, Architect; MR. A. FOSTER, Architect to Barclays Bank, Ltd. (*See p.* 107.)

ARCHITECTURAL FLOOD LIGHTING

MR. W. G. RAFFÉ, A.R.C.A., lectured recently before the British Institute of Decorators on "Publicity and Paint." In the course of his address, he referred to architectural flood lighting and its troubles, and said recent developments in the artificial illumination of buildings at night by high-powered electric lamps, known under the apt term of "flood-lighting," had introduced a new feature into the problems to be considered in architectural design. While this factor, being known beforehand, could be adequately allowed for when it was planned for new structures, there were a great number of existing edifices which were gradually being lighted in this particular way, for which obviously no allowance could be made.

The normal light and shadows of a well-designed building were, as every architect knew, arranged in such a manner that the natural direction of overhead, or nearly overhead, daylight was accepted as the natural direction of light, so that all the modulations of the external surface were designed with this in mind. All previous methods of artificial lighting had been insufficient to cause any distinct need to modify this normal necessity. Now the deliberate interference with the lighting of a design, by introducing a direction of light which was the exact reverse to that of natural daylight, in the shape of electric lamps fixed low down in the front, directing their beams almost vertically upward, lighted all the parts that were normally in shadow, and left in shadow the smaller proportion of surface which usually received direct light. The effect was not always happy, for even the great skill usually displayed in the correct placing of the lamps could not after all modify the actual form. The question arose: Could this defect be remedied by any unextravagant means in existing buildings? The answer was, that it probably could be remedied, in some degree at least, in most of the commercial buildings which were so illuminated after nightfall.

They could call in the aid of a skilled decorator, who was sometimes in the ordinary course of his work required to modify more or less unsatisfactory proportions in interior decoration, by carefully designed treatment in line and tone which provided optical corrections. They could call in the aid of another art: that of the stage. This seemed to be the only other situation where light was received from below, in a non-natural and artificial method. The footlights, which threw a powerful illumination on the face of the actor, now had their architectural parallel in the flood-lighting of many commercial buildings. And as the actor painted his face, and accentuated the natural colour, to cope with the necessary light, so the decorator could probably paint certain parts of a structure to cope with the unusual light thus received.

Further than this, as the actor painted not only to supply essential accentuation, but to alter very considerably the apparent proportions of his face, improving or depreciating his own natural values of form and colour, so could a skilled decorator, by adding paint in suitable places, and of suitable tone, bring back the forms lost in the light, and perhaps even further accentuate them to bring out the best features of the architectural design, better than was possible in greatly varying daylight. For at night, the attention of the passer-by was drawn more closely to the unaltering illumination of the flood-lighted building. It was in light against many others in darkness. It was novel and unusual. The building was looked at, not only the display windows. But unless the light was broken into with a fair amount of well-articulated shadow, the structural effect of a work of architecture was lost, and it tended to become as optically flat as a hoarding, as easily passed and as easily forgotten. If there were not sufficient differentiation of form, then the necessary tone could be introduced with skilfully applied paint, or possibly other material of more permanent nature.

As yet, little had been done commercially, outside of large exhibitions, in coloured flood-lighting, but when that inevitable development did occur, then some differentiation in the strength as well as in the hues of the colours would serve to obtain the necessary architectonic effects.

ROYAL INSTITUTE OF BRITISH ARCHITECTS

AT a general meeting of the Royal Institute of British Architects held on January 5, the following members were elected:—

As Fellows: C. H. Lay, R. Lowry, E. L. Wratten.

As Associates: J. S. Dawson, R. W. Donaldson, B.Arch., Liverpool, L. R. Hiscock, W. A. Norbury, B.A., W. H. Owen, G. F. Shanks, H. S. Silcock, B.Arch., Liverpool, R. H. Turner, B.Arch., Liverpool, R. J. Willis, M.A.

The Final Examination.

The following is the list of the alternative problems in design for the R.I.B.A. final Examination for the year ending December 31, 1925:—(1) A Gateway and Screen; (2) A Doctor's House in a Country Town; (3) An Airway Customs House; (4) A Riverside Bathing Establishment; (5) A Private Chapel; (6) A Garage.

Dates for submission of Designs in 1925:—Subject (1), February 28; Subject (2), April 30; Subject (3), June 30; Subject (4), August 31; Subject (5), October 31; Subject (6), December 31.

The annual exhibition of designs and drawings submitted for the prizes and studentships, 1925, will open on January 20, at the R.I.B.A. Galleries, and close on Monday, February 2. The Exhibition will be open daily (Sundays excepted), free to the public between the hours of 10 a.m. and 8 p.m. (Saturdays, 5 p.m.).

Sessional Programme.

In the Sessional Programme of the R.I.B.A. a lecture on "Sculpture in Relation to Architecture," on February 16, by Mr. D. S. MacColl, had been arranged. Unfortunately Mr. MacColl's health has made it necessary for him to abandon the lecture. Arrangements will be made as soon as possible for the reading of another paper.

ARCHIBALD DAWNAY SCHOLARSHIPS.—On the recommendation of the Board of Architectural Education, the Council of the Royal Institute of British Architects has approved the revised scheme for the Scholarships. In accordance with the terms of the will of the late Sir Archibald Dawnay, the Royal Institute of British Architects offer annually, for competition between students of recognised schools, two scholarships, one of £75 per annum for one or two years, and one of £50 per annum for one or two years.

EXAMINATION FOR THE R.I.B.A. DIPLOMA IN TOWN PLANNING.—On the recommendation of the Board of Architectural Education, the Council of the Royal Institute of British Architects has approved the revised regulations for the examination.

Full particulars of the Scholarships and Diploma can be obtained from the Royal Institute.

A Joint Committee of the R.I.B.A., the Town Planning Institute, the London Society, and the Architecture Club have prepared a Memorandum upon the subject of Thames Bridges, which has been forwarded to the London County Council for the consideration of the L.C.C. Special Committee on Thames Bridges. A deputation of members of the above societies will be received by the Special Committee on Thames Bridges at 11.15 a.m., on January 19, and will support and explain the views contained in the memorandum. The deputation will be introduced by the Earl of Crawford and Balcarres, and the speaker will be Mr. W. R. Davidge, F.R.I.B.A.

EXHIBITION NOTES

The Fine Art Society.

A NUMBER of interesting pictures by Mr. Frank O. Salisbury occupy the ground floor gallery at the Fine Art Society's. Very able paintings these are, and architects will be specially interested to see the artist's capable handling of architectural subjects, which include both old and new works, such as St. Paul's and St. Peter's and the South Kensington Museum, of which latter there are three excellent interiors. The effect of light and colour in some of the subjects is extremely well done, as in the "St. Mark's, Venice" (18), and "The Unknown Warrior's Tomb, Westminster Abbey" (37). "The Sinai" (48) is an exceptionally fine imaginative figure of much dignity and power, and is painted with much quality of texture and colour. Mr. Salisbury shows his capacity over a wide range of subjects, and his painting of "Parrot Tulips" (50) is to be counted amongst his best essays, though it suffers from its frame, which would have added much value to the effect had it been in black with a bold bolection mould. It is curious that a painter of such outstanding ability gives us little or no texture of wood in his interesting study of the Westminster Palace roof. The "Great West Steps of St. Paul's" (56), the "Mayflower Barn" (30), and the "Liverpool Cathedral" (55), might be singled out for special note; but the exhibition as a whole is one of an exceptional kind. The holiday sketches, which form part of the exhibition, do not seem quite answerable to the title, as they are more like the careful work of an accomplished painter than the promptings of happy, irresponsible enjoyment, such as we think of as holiday occupations.

The Leicester Galleries.

There are some delightful drawings and pictures in the first room at the Leicester Galleries, by masters of some decades back, which emphasise the intolerant feeling created amongst many towards the curious developments of modern pictures. That clever etcher, Mr. Walter Sickert, has a brave show of etchings, but he appears to think more of his technique than of his subjects, which are mostly of an uninteresting character: this collection in the Reynolds' room does not, however, fail to do justice to the capabilities of the executant. In the Hogarth room, we find the work of four painters, whose ideas of form and colour are difficult to appreciate; it is, perhaps, unkind to say more.

MEETINGS

FRIDAY, *January* 16.

Town Planning Institute.—Mr. W. R. Davidge on "London Traffic and Thames Bridges." At the Institution of Mechanical Engineers. 6 p.m.

SATURDAY, *January* 17.

Association of Architects', Surveyors', and Technical Assistants.—Visit to the Morden extension of the City and South London Railway. Meet outside Morden Station 2.45 p.m.

MONDAY, *January* 19.

Royal Institute of British Architects.—Dr. Oscar Faber on "Applications in Building and Foundations of Modern Engineering Construction." At 9, Conduit-street, W.1. 8 p.m.

Surveyors' Institution.—Mr. C. Carter on "Recent Legislation and Other Causes affecting the Housing Shortage." At 6.30 p.m.

WEDNESDAY, *January* 21.

Royal Society of Arts.—Mrs. Graydon-Stannus on "Irish Glass, Old and New." At 18, John-street, W.C.2. 8 p.m.

Association of Architects', Surveyors' and Technical Assistants.—General Meeting of the Metropolitan Branch. At Caxton Hall.

THURSDAY, *January* 22.

Association of Architects', Surveyors' and Technical Assistants.—Mr. Goodenough on "Gas as a Public Service." At 57, Mortimer-street, W.1. 7 p.m.

SIXTY-THREE YEARS OF ENGINEERING*

THIS is a work in which a distinguished engineer places on record some of the incidents of a long professional career, touching upon many things of national importance that ought not to be forgotten. Some matters relating to the "human" side of work, so interesting to those working for the betterment of our social standard of life, are recorded in the latter pages, and show once again that the problem is an old one, and that many people, including the author, have been working at it for many years past, quietly and unobtrusively, but none the less effectively

Another point which this book emphasises is the close relationship between the work of the civil engineer and the architect and builder, although the viewpoint and methods adopted are often very different. In the second part the author's share in the work of preservation of ancient buildings, and the small cost of such work is startling. The recent discussion concerning Waterloo Bridge and the proposed solution finds a parallel in the pages of this book. The authorities had condemned the old Portinscale bridge, dating from 1300, and it was to be rebuilt at a cost of £8,000; but the locality valued so highly this historic treasure that for seven years they maintained an effective opposition, resulting in its repair by means of "grouting," at a cost of £612 without "any alteration in its appearance." Another instance may be quoted, i.e., Bletsoe Church, near Bedford, which was in a very dangerous condition, and some £1,420 was the estimated cost of the urgent repairs. Towards this a sum of £70 was subscribed, and the authorities were in despair, when the author, upon examining the building, found himself able to do all that was necessary for the £70, the repairs effected being invisible.

The outstanding case, however, is the repairs to the Cathedral at Winchester, including the gigantic work in renewing and extending downwards the foundations. Of this latter work the reader is reminded that the Cathedral was originally built in marly clay 10 ft. below the ground level upon some beech logs, and that bed clay 6 ft. thick rested upon some 8 ft. of peat, with a thin layer of quicksand and silt, before reaching the strata of gravel and flints. The water level reached the foundations of the church, so that all the subsequent work of carrying the foundations downwards had to be performed by a diver, and the muddy character of the water made it necessary to do all this work of underpinning and renewal to be carried out in absolute darkness. The routine adopted in these cases is, first to grout the walls, and then to deal with the foundations. This section contains references to Lincoln, Peterborough, Canterbury and Exeter, as well as a number of churches. The case of the saving of the Nurses' Home in Great Ormond-street is detailed in Chapter XV and affords a striking case of economy in costs, as well as in effectiveness, as regards results; whilst in Chapter XVII the condition of St. Paul's Cathedral is very clearly stated, and its serious state made quite plain. This chapter may be commended to all who desire an account, briefly and completely, of the position of affairs as regards the safety of this building.

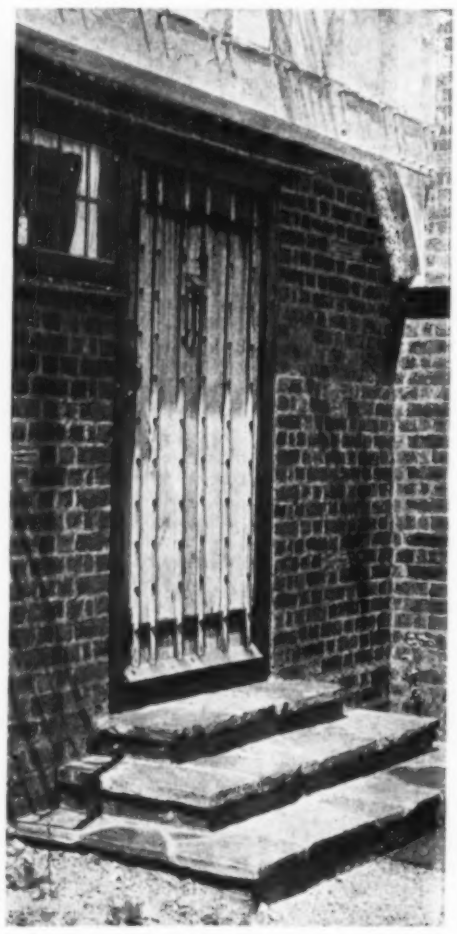
After reading this chapter, one's mind inevitably turns to the proposed new bridge over the Thames, and the question arises, Is it necessary or advisable to proceed with the scheme? Traffic, in the course of time, gravitates to certain routes as the result of competition, accessibility, ease of gradients and a variety of other causes. At present the London and Blackfriars bridges carry between them an enormous amount of traffic, but the rebuilt Southwark Bridge is almost deserted, and when examined by a traffic expert, some reasons become at once apparent. Anyone may experiment by attempting a journey south or north, using either London and Blackfriars bridges one way, and Southwark Bridge on the return journey.

It appears necessary to bring home afresh to all the custodians of historic buildings the possibilities of the grouting machine which the author proves, before repairs and restoration schemes, however plausible, are allowed to proceed. The machine in its essence is simply a force pump to inject into the interstices of walls, &c., a liquid cement, which will unite together in a solid mass all the materials there, and in addition fill the voids existing, thus forming the whole mass into a monolithic structure. The author describes the process simply, as, first, blowing out all the dust and rubbish accumulated during the ages, including, as at Winchester, owls and martins, rats and mice, and wasps and bees, &c., that have taken up their residence in the openings, together with the non-building materials taken in for building their nests. At Windsor two owls refused to come out, so they were built into the fabric. In the second place, water is forced into the walls and all the dirt remaining washed out, and when the effluent is clean, the third stage commences by injecting a cement in the consistency of cream, to fill up all the spaces, and so complete the consolidation—one almost uses the word rebuilding—of the whole mass. The cracks are sealed up by means of clay so as to prevent the escape of the cement before it has set, whilst the displaced masonry and cracked stones are replaced or made good, and the cement backing secures them in position. There are some who may find it possible to question the use of the grouting machine in some of the cases given, but there can be no doubt but that it has a part to play in the preservation of ancient buildings of historical value, and prejudices should be brushed aside, so that full advantage be taken of such an economical process.

In the early pages some references are made to building of the Great Exhibition in Hyde Park in 1851, which was composed mainly of iron and glass. It is not made as clear as it might have been, that the Crystal Palace at Sydenham is the Great Exhibition, which was, at the close, taken down and taken to Sydenham and rebuilt on that grand site, overlooking a large part of Kent, Surrey, Essex, &c. By the way, how many builders recognise this building as the first large framed structure? and one in which the external surface was composed of such brittle material as glass? The author's verdict is that the Crystal Palace after some 73 years' exposure to the elements is in excellent condition, in spite of the prophets of 1851, who only gave it a very short life, stating that the first wind would blow it down like a house of cards, or that the first hail storm would break all the glass, &c.

The human side of the author and his friends is shown on many of the pages, but more in detail in the last section of the work, and may help to go far to refute some of the dangerous doctrines held by some of our would-be saviours of mankind. Every page is worth reading of this very interesting volume and we can cordially commend it.

*"Sixty-three Years of Engineering, Scientific and Social Work." By Sir Francis Fox. (London: John Murray.) 1924. 18s.



"Fonthill," Coulsdon: Detail of Doorway.

MR. SYDNEY E. CASTLE, M.S.A., Architect.
(*See p.* 111.)

LIVERPOOL ARCHITECTURAL SOCIETY

We have received from the Liverpool Architectural Society the annual report of the Council for 1923-4. It states the present membership of the Society consists of 56 Fellows and 68 Associates, a total of 124. There are also three Hon. Fellows, 13 Hon. Associates, and 23 Students. The Council received during the year a deputation of the Master Builders' Association, who said that arrangements had been made whereby they would rejoin the North-Western Federation (of Master Builders) from May 1 next. The deputation explained the difficulties of the position with respect to apprentices in the building trades, and the efforts that were being made to obtain an increase in members. In view of the much larger amount of capital now required for carrying on the building trade, the deputation asked the assistance of the Council with respect to the issue of interim certificates, which it was desired should be issued more promptly as the money became due. Where it was intended that a penalty clause should form part of the building contract, it was asked that it should be so stated as an item in the bills of quantities.

The Honan Scholarship for 1925 will be for the best design for a residence on a site fronting a boulevard.

The following letter has been circulated to the members of this Society by the Hon. Secretary:—

"I understand that the Secretary of the Liverpool, Birkenhead and Wirral Districts Building and Allied Trades Employers' Association has circularised you concerning the new Rule which his Association has made regarding tendering against non-Federated firms. I may take this occasion of informing you that the statement that the Council of this Society 'fully agrees' with the proposal does not at all represent the facts. I am instructed to inform you that this matter has been referred by my Council to the Council of the Royal Institute of British Architects, and that a correspondence is taking place between us and the Master Builders on the subject. It is obviously desirable that this correspondence should result in an amicable understanding. With a view to this it is considered advisable that individual members of this Society should not become involved in isolated action with the above Association on this point. If occasion arises on which members of this Society are embarrassed or interfered with by the enforcement of the Rule in question, they are invited to communicate with me so that they may ascertain the point at which this controversy has arrived and the consideration which affect it."

Architect's Estate.

Sir Thomas Graham Jackson, Bart., R.A., of Evelyn-gardens, Kensington, S.W., who died on November 7, in his 89th year, left estate of the value of £37,174, with net personalty £19,131.

LONDON TRAFFIC

ON January 9, Mr. Walter Godfrey, F.S.A., read, on behalf of Mr. Alfred C. Bossom, a paper before the London Society on this subject, at the Royal Society of Arts, John-street, Adelphi. Mr. Raymond Unwin presided.

In the course of the paper the author said in the past the world had looked to London for the solution of its traffic problems, for the gloved hand of the London policeman had directed traffic largely without friction, thereby setting the world a great example. A new condition had arisen, and the temperament of the Englishman introduced a most powerful influence upon any solution of London's traffic situation. Though probably more law-respecting than any other nation, the English insisted on independence of action, and independent action in a congested district created confusion. Twenty years ago the traffic problem was largely one of caring for the horse-drawn vehicle, but during this last decade the form of traffic had changed entirely. The motor-drawn vehicle had almost entirely supplanted its horse-drawn predecessor. Again, the problem in London was quite different from that in America, for in the States the desire was to reach the destination with speed and, if possible, comfort; while in England the desire was to reach the destination in comfort and, if possible, with speed. The inconvenience almost joyfully borne in the spirit of adventure by the citizens of New York in the subways and tramways would be abhorrent to the very great majority of Londoners.

London might be termed a Gothic city, so to speak; one that had grown up through the centuries without any definite plan, and even when a plan was proposed by Sir Christopher Wren it was famous more as a paper record than as a constructed city. London was rather a collection of small cities than the outgrowth of one large one. The gaps had been filled up, and to-day it might be termed, perhaps, twenty-five cities, each with a quarter of a million inhabitants that had grown together without any preconceived connecting arteries or scientifically designed means of distribution or circulation, but which, through the ingenuity of the inhabitants, had been turned into a very workable and practical city until the advent of this new form of transportation. Also, the leasehold system prevailing in England introduced another almost insurmountable complication to any radical readjustment of thoroughfares. An age had passed while the effort had been made to widen the Strand, and still it was not completed.

If such a tremendous change had taken place during the last twenty years, were they not liable to find a similar rearrangement in the next twenty? Once the motor was invented, it did not take long to demonstrate its advantage as a means of locomotion, and now that aircraft had demonstrated its efficiency it was not by any means beyond the realm of possibility that by 1950 their traffic problems might be entirely changed again. By then, they might ascend by lifts in landing towers, step on board some form of aircraft, be carried to their destination, there to descend, thus creating new traffic problems in an entirely new direction. The need of future landings for aircraft, although in no way a feature to-day, should not be ignored, for the time was undoubtedly coming, and coming soon, when this form of locomotion would introduce its own problems. With a problem of economy such as one heard of on all sides, the first point that struck one who had been interested in this traffic situation was how could the situation as it stood be relieved without much expense, and immediately one answer came to mind, that was, though something foreign to the English disposition—definite control! Making practically no structural changes whatever, the situation in London could be most materially relieved if a Board of Traffic Control with compelling power were created. In New York, for example, where congestion had almost reached the height of impossibility, relief was instantaneous to a very great degree when a definite control was introduced and carried out with a firm hand.

It did seem that there was need of concentrated study of kinds, volume and routes of all traffic, including 'bus, service car operation, parking conditions, street capacity, and regulations of the probable increase in traffic and what provision could be made for more intensive use of existing streets, and by the development of rules for regulating or restricting traffic, and laying out a method for accomplishing and meeting any expense due to such steps. Under a Control Board, London should be associated with the surrounding counties, so that traffic entering or leaving the Metropolis could be directed along routes which would stand for freedom. The subways, the trams, the 'buses, taxis, and privately-owned cars and conveyances, should all be subject to regulation, and be compelled to work as part of one large and comprehensive plan. This would, by no means, entail a centralised ownership, but it would necessitate a centralised control, within whose body should be representatives of all the different forms of transportation. With the existence of such a body it would be found that compulsory regulations could be arrived at which would very soon demonstrate their own advisability or otherwise, and, in so doing, carry on an intensive educational campaign for the benefit of the general public, who would be the gainers, though at times there might be decisions made which apparently would not prove to be beneficial at once.

It had been found, where adequate statistics had been taken, that the majority of automobile accidents were the fault of the pedestrians rather than the automobile driver, and it was only due to the alertness and skill of the drivers that prevented an infinitely greater number of accidents; and even where the pedestrians had the right of way, they should be educated to be watchful less a car passed out of control, as occurred on a slippery street, and the educational efforts that such a Control Board could exercise would be of infinite value both to all drivers and pedestrians. With London's short and crooked streets, the one-way plan which had proven so beneficial in other places would need most careful working out and much experimentation before an actual solution would be arrived. One-way streets should only be introduced where a second street in the opposite direction was available within a reasonable distance, but there were no points in London to which there were not at least two routes; its very irregularity made this possible, but without definite control each individual driver to-day went his own way, but if certain areas were designated as approachable along certain routes one-way traffic would soon be established, thereby increasing speed materially.

England had always been the leader in town planning and would care for London's further growth, but this should be made compulsory, and if their forms of transportation maintained along the present lines for many years they would strangle the development of not only London, but of all of the larger cities. Compulsory plans of land development should be laid out and land owners made to follow the same. They, of course, would be beneficiaries in the long run, and although such a plan might sound rather un-English and arbitrary, conditions had developed which would demonstrate that it was impossible to allow each individual to have his own way in the arranging of his property where it was going to have such an effect upon all of his neighbours. Naturally the cutting of a number of main arteries and the erection of certain bridges across the Thames at desirable places would give relief in a measure beyond any of the suggestions here made, but the cost of such development was liable to delay them for such a period that their realisation would be long deferred. Although this should be contemplated and firmly fixed in the minds of those who had the planning of London and its future growth as one of their deep interests—and the satisfactory development of bridge approaches was a subject which London seems to have avoided—it would almost appear by intention that London had avoided facing this important problem.

All subways should be directly and simply looped and jointed together. The entire plans of underground development should be reviewed by some independent body and municipal financial support should, if needed, be forthcoming to develop this method of rapid transportation. Methods of easy movement below ground to outlying centres would very quickly take from the surface many people who were now compelled to experience annoying delays in moving either to and from their employment or around in the conduct of their vocations. In this paper no effort had been made to refer to the æsthetic advantages that could be developed in making improvements, but in the event of cutting away certain obstructions this should not be forgotten. London had many great beauties which could be brought out; some remarkably delightful vistas could be constucted without losing that charm which was so essentially London, that of the unexpected, which was so often hidden. It was vital for the future that London dreamt her dreams to-day for the generations to come, and by so doing it would be at less than a quarter the price which would be the burden on the coming generations.

To summarise the proposals:—

First: A Traffic Control Board with compelling powers should be organised to take hold of conditions as existed to-day, and by regulation, re-routeing and definitely educating the public, materially relieve London's present situation.

Second: Horse-drawn vehicles should be entirely eliminated from the important arteries. All repairs should be carried on without interruption and the roadways should be of materials that would be of the longest possible wearing quality for motor traffic.

Third: Slow-moving vehicles and parked vehicles should be removed from all congested thoroughfares.

Fourth: The removing from the centre of narrow roadways of all masts, lamp-posts and islands of safety.

Fifth: A signal system enabling traffic to know at some distance ahead where it would have to stop and where it would have to run freely in each direction.

Sixth: Pavements with the curves and corners should be reviewed in detail at all points, if not the best possible.

Seventh: Overhead bridges at a few of the strategic spots should be provided for pedestrians, and upper level sidewalks also allowing an upper floor shop window could be provided to remove the crowd from the ground and widen the roadway.

Eighth: Certain important points should be tunnelled to allow vehicular traffic to by-pass already overcrowded locations.

Ninth: Needed condemnation proceedings should be carried out upon poor property paralleling high-price thoroughfares, thus creating an important thoroughfare out of cheaper land.

THE MAKERS OF ENGLAND

SIR BANISTER FLETCHER, F.R.I.B.A., recently commenced the second term of University Extension Lectures on Mediæval Architecture, at the Central School of Arts and Crafts, Southampton-row, W.C. 1, by a discourse on the earliest, or pre-mediæval, architecture of England, dealing in turn with the work of the Ancient Britons, the Romans, and the Anglo-Saxons. He indicated some of the influences which had moulded their architecture, and showed how the activities and civilisations of these earlier periods played a great part in the conditioning of Norman and Gothic architecture. The Roman occupation, he said, changed the face of England. They ruled roads through it, built walls against invasion, founded walled cities, built thermæ, or baths; villas with central heating; and lighthouses. The arrival of Christianity was evidenced later, not only in the conversion of kings and their subjects, but in the building of Anglo-Saxon churches and in bishoprics. Thus, again, during the Saxon period, the scene was changed by the erection of many churches, like that now standing at Bradford-on-Avon. Religious zeal culminated in Edward the Confessor, at the dawn of the Norman period.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially to legal matters.

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or better still, in typescript.—ED.

Coal Crushing Machinery.

[REPLY TO INTERESTED, JANUARY 9.]

SIR,—Coal crushing machinery is usually installed at brickworks in conjunction with a firing plant which feeds, in uniform flow, coal dust into the firing holes. The purpose is mainly economy in fuel consumption, the coal dust firing instantly as it descends the fire hole and before it reaches the bottom, securing a maximum of energy in a uniform way, with a minimum of fuel. The coal must be ground to a uniform dust in order to be evenly handled in the firing plant, and the coal crushing machinery is for this purpose.

"BRICKS."

The Origin of Sash Window.

[REPLY TO SASH, JANUARY 9.]

SIR,—The sliding sash window was a product of the Renaissance, which seems to have made a first appearance in the Queen Anne period. The Renaissance born of the fresh study of the classics made a truly British appearance in this country. At first it was expressed as certain forms applied to the traditional design, and the stone mullioned window spaced so as to allow side hung casements of a width that could stand against the wind, and be readily handled, held its own against the invading influences.

As the movement developed, the desire more faithfully to reproduce the classic proportions grew stronger, and it was felt that such windows were at variance with the vertical proportions of voids which the classic facade demanded. For a time the mullioned window divided by a transome was called upon to fill the case, but always there was the desire to express the window as a void, not subdivided by strongly-marked lines such as the mullion or transome. The sash window was the solution. Its large units held fast on three sides was proof against the gale, and its space, though divided of necessity by light bars to hold convenient units of glass, read as a void, and so helped the expression at which the designer in the classics aimed. Human ingenuity has a way of meeting human aspirations sooner or later.

I am afraid I cannot say who was the actual originator and know of no historical records likely to help in the quest. It certainly is remarkable that the origin of such a revolution in practice should be so buried in obscurity.

"BOOKWORM."

Reinforced Concrete Shuttering.

[REPLY TO STUDENT, JANUARY 9.]

SIR,—The time for removal of the shuttering of reinforced concrete varies according to the different variety of the work. For ordinary purposes, the following may be taken as safe minimum periods from time of laying to that of removal of shuttering:—Walls and columns, four days; beam bottoms, fourteen days; arches according to span, from twenty-one days upwards; floors, fourteen days.

"SITU."

SIR,—The Illinois (U.S.A.) Department of Factory Inspection rules are as follows:—

I may add that for each additional foot of span one day should be added. Forms should be so designed that the columns will carry only their own weight. The side forms of beams, girders and columns may be removed whenever the concrete is hard enough to maintain its form, usually after 48 hours. This enables the full drying effect of outside temperature to do its work. When it is believed the concrete in beams, girders and slabs has sufficiently hardened, the shuttering may be removed. This is usually after 72 hours. Supports should then be placed at intervals and kept in place for a week or two, until the concrete is dried. Shuttering on non-bearing walls may usually be removed after 24 hours. The times for removal of shuttering depend upon air temperature and amount of moisture in the air.

ERNEST MCCULLOUGH.

London.

SIR,—"Student" does not state whether the concrete is in columns, beams, walls or floors. The following extract from the Standard Specification prepared by the Institution of Structural Engineers should be of interest:—

"*Time for removal.*—The following minimum intervals of time shall be allowed between placing concrete and striking moulds:—

"*Slabs.*—7 days.

"*Walls and columns.*—4 days.

"*Beam ends if bottoms are propped.*—4 days, otherwise 14 days.

"*Beam bottoms.*—14 days.

"*Arches.*—21 days and upwards, according to the span.

"*Emergency props.*—If it be intended that the structure shall be used for carrying heavy weights within a period of six weeks from its completion, emergency props shall be left in for such time as the architect or engineer may direct.

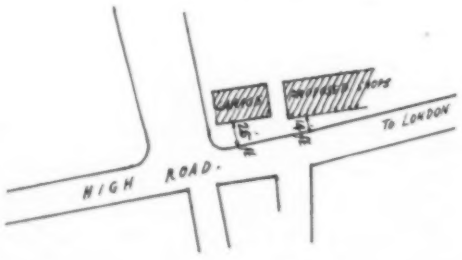
"*Frost and rain.*—The foregoing periods shall be increased by at least the time during which frost and/or rain may have intervened."

WILLIAM H. DARK.

Building Lines.

SIR,—I am wondering whether any of your readers would be kind enough to give me any information regarding the following:—

I have erected a building for the Ford Car people, being a showroom and garage, and the plans were submitted to the Council and they made me set back 25 ft. from the main road. I previously put my plan in as only being set back 15 ft. This they would not pass. There are no houses on either side to define the building line.



They now propose to erect shops as indicated on the plan and the Council are allowing these shops to be erected 14 ft. from the road line, which means that these buildings will project 9 ft. in front of my client's property.

Have they the right to sanction this, and have we power to ask for compensation?

"F. M. M."

[The inquirer does not state the grounds on which the local authority "made" him "set back 25 ft. from the main road." Was there a building line of 25 ft. shown on the lay-out of the estate, or to which owners of the land had to conform under the restrictive covenants as to building? Apart from any question with the local authority, it may be that enquirer has a remedy against the adjoining owner under covenants in the purchase deeds, should the adjoining building be set forward 9 ft. Under Section 155 of the Public Health Act, 1875, an urban authority has power to regulate the line of any building that has been taken down (that is, substantially taken down), in order to be rebuilt or altered; and, in that case, shall pay or tender compensation to the owner, &c., for any loss or damage he may sustain in consequence of his having his building set back or forward.

Similar provisions are made in urban districts and places where the Towns Improvement Clauses Act, 1847, is in force; also, under this Act the local authority may allow, upon terms, any building to be set forward for improving the line of street in which it or any building adjacent thereto is situated. So far, new buildings are not affected, unless they are set back or forward under the provisions of the Town Planning Acts, when compensation is payable, account being taken of "betterment." Section 156 of the Public Health Act, 1875, deals with the question of buildings not to be brought forward. It was repealed by the Public Health (Buildings in Streets) Act, 1888, which, however, re-enacted it in an amended form; and, by Section 3 thereof, it is not lawful in any urban district, without the written consent of the urban authority, to erect or bring forward any house or building, in any street, or any part of such house or building, beyond the front main wall of the house or building on either side thereof in the same street. A house at the corner of two streets may be in both streets for the purposes of this enactment.

The question, then, is for the local authority to determine; and there must be the consent of the authority. When once given, the Courts are slow to interfere; unless it can be proved that, in giving the consent, trespass is threatened or intended—which does not appear to be the position here.

On a consideration of the above, and having certain other facts in his mind which the replier has not, inquirer should make representations to the local authority with a view to a compromise and satisfactory settlement. It may be the local authority, in determining to do what it is said to have done, is of opinion that the street is improved by the proposal.]

Damp Walls.

SIR,—I should be very grateful if any of your readers could give information which would help to determine the cause of damp walls in the following case of a house built two years ago in an exposed position; in one respect the dampness behaves in an unusual manner, which I describe later.

The walls are 13½ in. to ground floor, 9 in. to first floor, cement rendered externally and plastered internally with ordinary lime plaster. The bricks are wire cuts and appear to absorb about 19 per cent. of their weight of water after twelve hours' immersion; the rendering is ⅝ in. to ¾ in. thick, and absorbs about 3 to 3½ per cent., but is very hard, and I should judge it to be about 1 to 3 cement and sand, in two coats. The external walls are at times very damp, particularly to the first floor, and it appeared at first that driving rain must get through the walls in spite of the rendering. Is this probable?

Since I saw the house I am informed that, during one storm, the walls, which became very damp before rain began to fall, dried out very considerably during the rainfall. It would almost appear from this that the plaster might

TIME REQUIRED FOR MOVING FORMS.

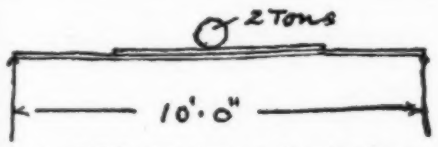
	Above 60 deg. F.	50 to 60 deg.	40 to 50 deg.	Less than 40 deg.
			Not less than:	
Columns	3 days	5 days	10 days	Not until tests have been made indicating that the concrete is set.
Side forms for girders and beams	4 days	6 days	10 days	
Bottom forms of slabs (6 ft. or less span)	4 days	8 days	14 days	
Bottom forms of beams and girders (less than 14 ft. span)	14 days	18 days	14 days	

contain some hygroscopic component. But if so, why should not the internal dividing walls also be damp? I may add that the house has no central heating, and not many fires are used. Is it at all possible that, in two years, the walls have not yet properly dried out? I should be very grateful if any of your readers with similar experience could say which is the probable cause of the dampness; and, if they think the plaster is hygroscopic, whether there is any cure short of replastering.

"M."

Joists.

SIR,—A 4 in. by 3 in. by 9½ lbs. R.S.J. over a clear span of 10 ft., supports in the middle a concentrated load of two tons. Another 4 in.



by 3 in. R.S.J., 5 ft. long, is inserted between the load and the joist. What is the effect on the B.M. and deflection of the longer joist?

W. PARRY-JONES.

Resignation of an Architect.

[REPLY TO "RETREAT," JANUARY 2.]

SIR,—"Retreat's" letter in your issue of the 2nd inst. raises a most piquant question and one which I suggest if ventilated in your columns would be of the deepest interest and not without amusement to the profession. There must be many living architects who have found themselves in this quandary—where tact, sympathy and financial considerations have been of no avail, and where resignation was the only outlet to an impossible position.

The medical profession has an easy way out of such an *impasse*. The G.P. advises consultation with a specialist, and promptly intimates to that gentleman to steer the recalcitrant patient to another G.P.! The legal profession includes members who batten on obdurate clients. They are meat and drink to them. The larger the number of interviews, the greater the sloppiness of mind against which they find themselves, the higher their fees. Very occasionally they are bunkered and throw up the brief; but there are hosts of others—briefless and otherwise—who crowd to the rescue!

Whether there is, or is not, a law to deal with the after-effects on a client, or his architect, where the latter throws up the sponge, is scarcely the issue, however, in a profession which rightly esteems its honour. Your correspondent appears to be in the anomalous position which has faced many architects in the past; and until the ethics of the profession and a higher appreciation of the art is understood by the public, it will confront them countless times in the future. It is obvious that if an architect, merely out of pique for a slight or even a direct insult, withdraws his drawings and specifications and throws over his commission when once a building has been started—or, more serious still, extensive alterations or restorations are held up—he would surely be liable for heavy costs and compensation?

It would appear to resolve itself, therefore, into one or two specific questions. At what stage in the above instances is an architect legally and morally justified from his own point of view in resigning, and what safeguards can, and should he, as a gentleman, establish as a protection for his whilom client? Personally, I feel that, if an entirely new work has been started, and the client, from weakness of mind, stubbornness, or other causes, proves impossible to work with, the architect should certainly give at least a few weeks' notice of his intention; so enabling the client to make adequate arrangements for continuing the works with as little inconvenience and loss as possible. This means that the drawings, &c., would have to be handed over. The honour of the profession calls for consideration on these lines. There is no reason why the architect should place himself in the wrong. Further, these "few weeks" may bring about hard reflection of client and architect alike, and lead to a saner point of view on the part of one or the other—or both. If a change of mind does not come about, an arbitrator or lawyer can adjust fees for the professional services rendered, if the client proves difficile.

If actual building operations have not been started and the architect at long last concludes that his client will be impossible to get on with, without a subversion of the architect's honour or dignity, the question of fees due to him will depend entirely upon the nature of written instructions he has received for the preparation of the scheme. The R.I.B.A. schedule is explicit, and even one-quarter of these with peace of mind is better than months of acrimony and argument with an "impossible."

The possible aftermath to an architect should, however, never be overlooked. It can be drear and dire, as the writer knows to his cost! The far-reaching effect of a bumptious busybody who ignorantly chatters about the alleged high-handed action, independence, or pride, of a certain architect he or she "once thought of employing," &c., *ad nauseam*, is limitless. It dogs one for years, and has a baleful habit of cropping up when least expected. To retain one's self-respect and "to know what you prefer, and not to humbly say 'Amen' to what the world says you ought to prefer—is to keep your soul alive" is delightfully comforting, but, alas! it doesn't always add to the credit side of one's banking account! I knew an architect in my youth who gave forth the following dicta with gusto: "Tell your client what you believe to be right . . . after that, if he or she wants the ridges and chimney-pots buried in the ground and the footings skyed, give 'em it! There are scores of others who will give them all and anything they want!" Needless to add, he is now a very wealthy, though not exactly a distinguished, member of our profession!

"DATA."

Echo.

SIR,—I should be obliged if some reader could give me any information as to the probable cause of houses built with concrete and breeze blocks suffering from "Echo." I have not experienced this drawback personally, but am told such is sometimes the case.

Also I should welcome any views on matters of construction of external walling, using 4½ in. brickwork, 2 in. cavity, 4½ in. breeze blocks. No height of wall would be more than 17 ft. off foundations, and I propose that the plates should be 5 in. by 2 in., having an equal bearing on the two half-walls.

"BERKS."

Clay Foundation.

[REPLY TO "SAFETY FIRST," JANUARY 9.]

SIR,—If a hard clay bottom has been reached of fair uniform quality, and if this depth is sufficient to hide and cover his footing courses, the inquirer need not go lower unless it is suspected that there are adjacent impediments to solid foundations, such as dried-up watercourses, &c.

If there is any doubt regarding the clay bottom, the inquirer can minimise the risk of fracture or settlement by the insertion of two rows of mild steel rods in the foundation concrete as reinforcement; the rods to be lapped at least 12 in. and to continue whole length of trenches so that they lap or bond at angles. The rods also to be laid near bottom of foundations, but well surrounded with concrete. A reinforced foundation should be laid under the supervision of an architect or structural engineer.

WILLIAM H. DARK.

Trench Filling.

SIR,—There appears to be a prevailing belief that more soil cannot be got into a trench in refilling than was taken out; this belief goes even further, to the extent that it is generally denied that all of that taken out can be returned.

In a law case of interest to me I gave evidence to the contrary as to a tunnel in loamy sand which was supported by my tunnel drivers who had often done it, but my own engineering expert witness cast doubt upon it improperly, seeing that his knowledge was incomplete. The opposing witness, including a public works contractor of long experience, denied the possibility. Apparently the Judge was persuaded by quantity rather than quality of the evidence.

With the object of having definite quantitative knowledge I had the excavated soil kept separately from each of two similar lengths of sewer trench. One was refilled using my ordinary hand-ramming, and it required 10 per cent. additional to fill it. The other was rammed with a mechanical rammer; it took 7 per cent. additional. I use water where advantageous in refilling.

CITY ENGINEER.

Hollow Walls.

[REPLY TO "CAVITY," NOVEMBER 14.]

SIR,—I have just noticed a query on cavity walls in your edition of November 14, 1924, page 791. I had a similar experience some years ago and it was proved that the defect arose from mortar droppings not being cleared off the ties in the hollow space. This allows damp to pass from the outer to the inner surface of the wall, and in bad cases the number of ties could be clearly seen from the inside. In good work the cavity is kept clear of droppings by using a temporary wood fillet while the wall is being built.

S. A. BARNS.

Flooring.

SIR,—I shall be much obliged if any of your readers can tell me the best floor to lay on the ground floor of a light factory. A warm floor is desired, and one which will not dust up is essential as the factory is to be used for varnishing and French polishing. The subsoil is damp clay.

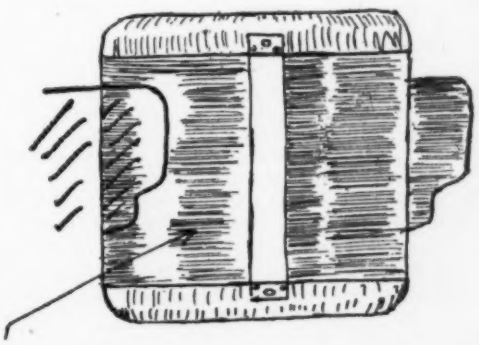
Would 1 in. deal floor boards nailed direct to 2 in. breeze concrete on ¾ in. Pudloed cement rendering, 4 in. concrete and 4 in. hardcore be economical and satisfactory?

"FLORA."

Templates.

SIR,—We should be much obliged if any of your readers could give us the following information. We recollect some time ago examining an idea for readily obtaining the shape of any given section, in order to obviate the cutting-out of special templates, and would like to examine the apparatus again.

ROUGH SKETCH OF GAUGE FOR OBTAINING IRREGULAR SHAPES.



Series of very thin steel "feelers" which are displaced according to the shape of the article—the correct shape being projected at the opposite end.

If any reader can recognise the article from the above sketch, and can put us in touch with the suppliers we should be very much obliged.

K. & R. T. Co.

THE BUILDING TRADE

LORD WEIR ON STEEL HOUSES

In a speech, broadcast by wireless from Glasgow, on Monday evening, Lord Weir said the present housing problem was essentially one of rapidly accelerating the supply. There was no mystery as to the main factor which limited expansion—house building was carried out by skilled craftsmen in the various building trades, and at the moment they were practically all fully employed. But the results of their efforts were far behind the needs of the nation. In England, the deficit of houses was being slowly reduced; in Scotland, the production barely met the requirements, and there was no reduction of the deficiency. There existed a national emergency, which could only be met by emergency methods. One of the main lessons of the late war was that it did not matter how complex or elaborate an article might be, whether a rifle, a field gun, or an aeroplane, if it were really required on a large scale, it was possible to lay out special methods of production and so simplify and divide the processes that any man or woman, however unskilled, could carry out the production efficiently and economically. It was as a result of that experience that the Weir house had been designed and would be built. In its manufacture and in its erection, no skilled labour whatever would be used, and accordingly the scheme would neither interfere with nor undercut the efforts of the building trade. In his view, the building industry should be encouraged and helped in every way to turn out normal houses on normal lines, but in addition there should be a supplementary scheme under which standardised houses would be provided by the use of unskilled labour.

It was, he thought, a little unfortunate that the Weir house had been termed a "steel" house, because the mere mention of the word "steel" gave one an uncomfortable and cold feeling. As a matter of fact, the frame structure of the house was timber, only the surface of the outer walls being composed of steel plate. The advent of the "Weir" house had produced a mass of criticism; some of it helpful, some of it malevolent, due in the main to ignorance and lack of opportunity of seeing the house and to understandable prejudice. There could be only one effective answer to such criticism, and he left the house itself to reply to the critics. There were, however, one or two matters with which he could deal. The houses had been called ugly. That was far from the case; their architectural proportions were entirely pleasant to the eye and had been arrived at in consultation with one of the most distinguished Scottish architects. They would not be monotonous, because there were six different types—bungalows, two-story cottages, and flatted cottages. It had been said that the Weir house would be cold in winter and hot in summer, but the wall unit consisted of a steel plate, a double cellular air space, and an inner composition lining. Very careful experiments, on a full-size scale, had been made, and it was found that the actual rate of heat transmission through the walls was practically the same as that through a double brick wall, roughcast and plastered. The tenant would not know the difference between a Weir house and a house built of more usual materials. On the other hand, there was one great advantage which would be appreciated for the first time, and that was a perfectly damp-proof house. Brick, stone, and concrete were all, more or less, absorbent of moisture, but steel was quite impervious.

The internal arrangements and equipment of the Weir house were good, and the general quality of the furnishings and fittings was of a high standard. The pipe-work in particular had been designed on engineering lines, and was very sound and practical. It had been said that the house would have a short life because the steel would corrode. Apart from the steel, the life of the house would be the same as any other house, and the steel plate would last as long as it was kept regularly painted; they were now using an entirely new type of paint, which promised to give very wonderful results.

It was impossible to say how low the cost could be got, as it would depend on the number produced and the efficiency of the methods now being developed, but the Weir house would cost less than an ordinary brick house of equal size and with equal equipment, and in the future the cost would probably be substantially less. After the foundation work was completed, the houses could be built and finished ready for occupancy in less than fourteen days.

The first factory for the production of these houses, in Glasgow, was now being fitted up and equipped for the production of houses, and they were engaged on the first series of 300 houses of the bungalow type, which had nearly all been sold to local authorities as experimental and demonstration houses mainly for Scottish centres. The erection of those houses would commence about the middle of February, and if the programme was carried through without exceptional hitches, they should all be built and occupied before the summer was over. In addition, the Scottish factory would send a number of houses to England for experiment, and it was probable that arrangements would soon be made for the starting of four factories in England.

The "Weir" house would stand or fall by the judgment of the working-class housewife, and he was content that that should be so. He had initiated the scheme from a national point of view, and he only asked for fair consideration on the part of all concerned with housing. The building trade had an enormous task for many years ahead, without being able to meet the need of the people. His scheme did not compete with the building trade, but was supplementary to its efforts and to its entire capacity. There was no menace to the building trade or to the operatives in a scheme which was supplementary to anything the building industry could do. The "Weir" house did not in any way draw on building trade labour, but would draw labour entirely from the unemployed. The shortage of housing would be related to the surplus of labour, and for every Weir house built the country would save £75 in unemployment benefit alone. He had every confidence that when the full import of the scheme were grasped, the national spirit of fair play would outweigh and overcome any obstruction which existed in the way of the erection of these houses.

A Letter of Thanks.

SIR,—The expressions of kindness and sympathy to my family and me during my long illness (eight months) have been so numerous and widespread that it will take me a long time to convey my thanks to each individual, as I hope eventually to do. Will you, therefore, kindly permit me, through the medium of your paper, to ask my many friends—architects, surveyors, merchants, and fellow-builders—to accept in the meanwhile this means of thanking them one and all for their kind enquiries, gifts of flowers, letters and resolutions at meetings, during a period of great anxiety and suffering, from which I am happy to say I am now fairly on the way to a complete recovery?

ROLAND B. CHESSUM.

Cape Town Building Wages.

Following upon the agreement arrived at as the result of the recent strike, the building trade in Cape Town is to have all existing rates of wages both standardised and legalised as from December 1. The highest pay is 2s. 9d. an hour; and the lowest, 7½d. an hour.

LONDON MASTER BUILDERS' ASSOCIATION

THE installation of the new President of the London Master Builders' Association took place on January 7 at 34, Russell-square, W.C.1.

Mr. H. T. Holloway, in welcoming the delegates to their new home, said the new president had been elected by the unanimous votes of their colleagues. The Chain of Office which he had to hand over was more than a mere decoration; it symbolised the high traditions of the office and had inscribed on it the names of many distinguished men. Engraved on it was the greatest achievement of their industry—Wren's St. Paul's—which he hoped they would be able to keep in being.

After Mr. Holloway had handed over the Chain of Office, Mr. Fred Thorne, the new President, in response said he would first of all like to welcome Mr. Roland B. Chessum, who was once again able to be with them. It was due to his inspiration that the idea of a Chain of Office first came into being. He had great pleasure in moving the vote of thanks of the Association to Mr. Holloway for the sterling work he had accomplished during a year which had been one of considerable crisis.

Mr. Percy Culver, in seconding the vote of thanks, said Mr. Holloway had left an indelible mark; he (Mr. Culver) had come closely into contact with him at a great testing time—the time when it was necessary to possess sagacity, calmness and clearness of mind. Mr. Holloway had never been lacking in these qualities and the industry owed him a debt of gratitude.

After Mr. Holloway had briefly responded, Mr. Thorne, in the course of his address, said the necessity for their new premises was because their Association had grown largely in numbers and importance. The past year had been one of the most strenuous the Council had ever passed through. They had held 196 meetings, and, with few exceptions, the members of their Council had conscientiously attended. The organisation of the Association had greatly increased. It had its centre at Charing Cross and extended to a radius of 15 miles. London had its own peculiar difficulties, which did not prevail in places where they had the knack of being more correlated. It was of enormous importance to get hold of their neighbours in the next street, borough or province. He would impress upon them the necessity for enthusiasm; then the growth of their Association would be marvellous. Organisation was necessary if they were going to hold a united front, and they must have cohesion. The recruiting of labour for London had died away partly owing to the shortage of houses, and also because there was a demand for a better standard of wage in all parts of the country. The remedy, however, was not in bidding against each other for labour. The only remedy was to have a standard of attraction; a bonus on output standardised. He assumed that in some cases the L.M.B.A. had not taken as many apprentices as they might. The time had arisen when they must see that they were training their own craftsmen, and not be dependent on those trained outside London. In conclusion, Mr. Thorne said they must endeavour to make the building industry equal to any of the professions, whether medicine, law or art.

Mr. E. J. Brown said their thanks were due to Messrs. Holloway Bros. for sparing Mr. H. T. Holloway for his term of office. He would also like to express the pleasure they had in the presence of Messrs. Matthews, Forsdike and Melville. Alluding to their new premises, Mr. Brown made an appeal for new books. Messrs. Trollope & Colls had already presented a complete edition of the *Builder*, which nearly filled one bookcase, and he hoped the other would soon receive its full complement.

Mr. Higgs moved that a vote of thanks be sent to Mr. Theobald for the work he had done in connection with their new premises.

Messrs. Forsdike and Melville also spoke.

ARBITRATION IN BUILDING DISPUTES

By W. T. CRESWELL, Lic. R.I.B.A.; Assoc. (late Fellow) Surveyors' Institution, F.R.San.Inst., Barrister-at-Law.

II. THE SUBMISSION TO ARBITRATION.

THE forms of contract issued by the R.I.B.A. and the Institute of Builders contain each an arbitration clause. Notice is, by these clauses, to be given, at once on its arising, of any dispute or difference, whether the works are, at the time, completed or not; or, if it arises out of the final certificate of the architect. The notices must be given in accordance with any terms prescribed in the contract; but in any instance, the arbitration will not be held till the works comprised in the contract are completed. These submissions are valid and will be upheld by the court. See *re* Hohenzollern, &c., Arbitration (1886), 54 L.T. 596, and Wade Gearey *v.* Morrison (1878), 37 L.T. 270.

These clauses can be called into operation to decide such questions as the following:—

(1) If any item of work is outside the contract; and, if so, the price to be paid for it.

(2) Whether certain work is to be implied from the specification, drawings, &c.

(3) As to who shall pay the cost incurred by errors made in setting out the works.

(4) Whether defects noted in the work are due to the workmanship or materials not being in accordance with the specification and drawings.

(5) Whether work opened up was found to be in accordance with the specification, drawings and instructions.

(6) Whether the general contractor's objection to any special sub-contractor is a reasonable objection.

(7) If defects in the work were caused by frost or inclement weather.

(8) Whether the contractor's excuses for delay in completion are sound and permissible.

(9) If the contractor should be allowed any extension of time as he may claim for any stated cause.

Architect as Sole Arbitrator.

If in any contract the architect is constituted sole arbitrator, the arbitration clause should be very carefully constructed. If the contractor can prove that the architect has acted unfairly or partially (*e.g.*, basing his decision regarding any point on the opinion of the employer without testing the same by his own professional skill and judgment), then the decision of the latter would not be binding on the contractor. See Roberts *v.* Hickman (1911), Vol. 2, Hudson on Building Contracts, 426 (1913), A.C. 229 H.L.

Some matters in which the architect's decision is usually final and not brought under the operation of an arbitration clause are:—

(1) What the course shall be if there are found to be discrepancies between the drawings and specification; or, where these agree, between them and other contract documents.

(2) The dismissal of any workman to whom the architect objects.

(3) Removal of improper materials or work not in accordance with the contract documents.

(4) The assigning or sub-letting, by the general contractor, of any of the work, when such sub-letting is not provided for in the contract.

(5) Whether any work shall be opened up for inspection.

If the contract provides that the architect's decision shall be final on all points, then his final certificate is of the nature of an award of an arbitrator; and the contractor, if dissatisfied, would have to appeal to the Court, and give sufficient reason for an action. See Jowett Bros. *v.* Neath Rural District Council (1916), 80 *J.P. Journal*, 207.

This method of final reference to an architect, although it may be said to make him "judge in his own cause" in certain instances, is yet quite valid when agreed to, at the outset, by both parties, and if no undue pressure has been exercised on either of them, and unless there is some patent reason why he should be suspected of partiality. See Eckersley *v.* The Mersey Docks, &c., Board (1894), 2 Q.B. 667, where Lord Esher said, "It is an attempt to apply the doctrine which is applied to judges, not merely of the superior Courts, but to all judges, that not only must they be not biased, but that, even though it be demonstrated that they would not be biased, they ought not to act as judges in a matter where the circumstances are such that people (not necessarily reasonable people, but many people), would suspect them of being biased. Is that a rule which can be applied to such contracts as this, where, as between the contractor and his principal, both the parties agree that the chief servant of one of them shall be the arbitrator? If it was not for the agreement of the parties, if the rule applicable to judges were to be applied, it is obvious that it would be impossible to say that the engineer under whose superintendence the work has to be done could act as arbitrator, because some persons would suspect him of being biased in favour of the party whose servant he was. But that cannot be the case here, because both parties have *agreed* that the engineer, though he might be suspected, shall be the aribtrator. A stronger case must, therefore, be shown. It must, in my opinion, be shown, if not that he would be biased, that at least there is a probability that he would be biased."

If there be no arbitration clause, and the contract establishes the architect's final certificate as conclusive, this constitutes the architect arbitrator. Therefore, the architect or surveyor in this case should at all times use discretion in keeping his views to himself; as, in case of dispute, he might be accused of bias.

Distinction between Arbitrator and Valuer.

If a third person is called in to give an opinion as to the correct price of any work, he is not an arbitrator but a valuer, and his opinion is subject to review. In Taylor *v.* Yielding (1912) 56 *Sol. Journal* 253, there was an agreement which provided for the appointment of two valuers and an umpire. "in pursuance of and in accordance with the Arbitration Act, 1889." It was held that the parties to this agreement intended a submission to arbitration, and the Court corrected the phraseology; the argument being that where a judicial enquiry is intended, there is a submission.

Distinction between "Valuation" and "Arbitration."

It is important to draw a clear line between the terms "arbitration" and "valuation," as they are frequently loosely interchanged.

In Dawdy *v.* Hartcup (In *re*) (1885), 53 L.T. 800, Esher M.R. said that the word "arbitration," in Sec. 17 of the Common Law Procedure Act 1854, must be taken to mean a judicial proceeding in which the arbitrator is bound to hear both the parties, and to hear evidence, and to give a judicial decision. A person appointed to value is merely using his skill in valuing, and is not acting *judicially* between the parties in dispute. And if each party appoints his own valuer, the case is more clear, because neither can give the award. Further, if any person has the function of finally adjusting accounts, he is not thereby invested with the functions of an arbitrator, and the aggrieved party, if the adjustment is disputed, is free to seek remedy in Court. In Hammond *v.* Waterton (1890), 62 L.T. 808, it was decided that when the agreement is for fixing the amount to which one of the parties is entitled, notwithstanding that the term "arbitrator" is applied to the person appointed to do this, and the term "arbitration" applied to the proceeding, yet there is only an agreement for "appraisement," and the plaintiff was able, and did, proceed to recover under an action at law. (See also Collins *v.* Collins, 1858, 28 L.J. ch. 184, and In *re* Carus Wilson *v.* Grearie, 1886, Q.B. D.7.)

Where it is agreed that the architect shall hear evidence from both sides, and value the work in dispute, and that his subsequent decision shall be final and binding, and if he conducts anything in the nature of a judicial enquiry, then his final certificate is in the nature of an award by arbitration, and appeal to the court would have to be as against his conduct or bias. Finally, a valuer merely uses knowledge and skill to arrive at a correct price, an arbitrator acts judicially on all the evidence put forward.

Certificate on Valuation Only.

Therefore, if the architect's certificate for payment is made a condition precedent to the contractor's right to demand payment, the architect is thereby constituted a valuer, and not an arbitrator; and where it is desired that he shall be arbitrator, other conditions must be subjoined. His duties as an arbitrator and as a certifier must be clearly distinguished. In the latter capacity the provisions of the Act of 1889 do not apply, although it is evident that at any time he may be acting in the dual capacity. In Cross *v.* Leeds Corporation (1902), Vol. II, "Hudson on Building Contracts," 329, the Arbitrator named in the contract, who was also an official of the defendant Corporation, wrote a letter to the Corporation in which he said the claim was "outrageous." The Corporation applied to have the action stayed pending arbitration. It was held that the arbitrator was not disqualified.

In Wadsworth *v.* Smith (1871), R., 6 Q.B. 332, there was an agreement between a builder and the employer whereby the right of one of the parties to do a particular thing was made to depend on the determination of a third person. It was held that this was not a submission to arbitration, nor was the determination an award, and any dispute would have to be settled by a legal action. The determination was not an "award" within the meaning of Sect. 17 of the Common Law Procedure Act, 1854. Though this section is repealed by the Arbitration Act of 1889, it was held that the case would still be applicable and the subject of a legal action. But when the *dispute* is to be determined by a third person, there is a submission in principle—the dispute being the essential. An agreement between an employer and builder that an architect shall make a certificate in regard to works to be executed by the builder in also irrevocable, except by consent of both parties.

A failure to pay, where there is an arbitration agreement in existence, is not in itself a difference or dispute. (See L.N.W. Rly. Co. *v.* Jones (1915) 2 K.B. 35. There was a provisional order empowering the Company to make an additional charge for the detention of trucks, and the order contained a provision for arbitration. Regarding a claim for payment Rowlatt J. said, "It does not, however, follow that the Courts cannot be resorted to, without previous recourse to arbitration, to enforce a claim which is not disputed, but which the trader merely persists in not paying."

Umpires as Valuers or Arbitrators.

Umpires become valuers or arbitrators according to the clear intent of the parties that they shall merely value or give a judicial decision. That is according as they are called in to decide upon the general facts in the evidence, or merely in substitution of two valuers who do not assess at the same figure. Further (and this applies to all persons), a "valuer" does not subsequently become an arbitrator if he is asked, or elects, to hear and consider the facts in dispute; nor does an "arbitrator" become a valuer if the parties afterwards assert that they sought his opinion only as to the *value* of the work.

Death of an Arbitrator or Valuer.

Under Sects. 5 and 6 of the Arbitration Act 1889, it has been held that where a named arbitrator dies, the Court may appoint his substitute; but that where a valuer dies the Court has no such power. (See Hammond *v.* Waterton, 1890, 62 L.T. 808.)

APPRENTICES AND HOUSING LABOUR

THE Building Industry Committee set up by the Minister of Health in October last to advise and assist in carrying out the scheme embodied in the Housing (Financial Provisions) Act, 1924, particularly as regards the development and co-ordination of the supply of labour for house building have issued instructions for the guidance of local building industry committees. We take the following extracts from the instructions :—

It is remarked that the assurances from Mr. Neville Chamberlain that the provision of houses must be pressed on as rapidly as possible, that he is most anxious for the Committee's work to continue, and that he will give them every support possible are most valuable, and should enable all local building industry committees to proceed with the work without delay.

The Building Industry Committee is informed that relaxation as to the ratio of the number of apprentices and the abolition of a limit as applied to an individual employer has already taken place in some cases, and the Committee hope that as a result of the activities of the joint committees of the Regional Employers' and Operatives' Federations, normal apprenticeship will receive immediate and continuous attention, so that now and in the future ordinary apprenticeship will be the successful method of recruiting the trades and maintaining the balance in the personnel of crafts as compared with craft.

With a view to carrying out the recommendations the Building Industry Committee have drawn up for the consideration of the parties concerned draft recitals and conditions which they recommend should be included in all contracts placed by local authorities for the erection of houses.

Among its duties the local building industry committee has to certify to the architect acting for the local authority the number of apprentices which the contractor is required to employ and the number actually employed by him, and when the number actually employed is certified to be less than the number which the contractor is required to employ the Committee has to state whether or not suitable apprentices to a number sufficient to make up the difference are obtainable, and to give the names and addresses of such suitable apprentices. In order that the local building industry committee may carry out these duties it will be necessary for it to notify forthwith its establishment to the local authority or authorities within whose limits the area of the local building industry committee falls, and afterwards to keep in close touch with each authority so that whenever a contract for houses has been placed or the local authority is about to proceed to erect houses by direct labour such local authority may give the committee the information necessary to enable it to arrive at a decision as to the apprentices required. In this connection it will be the duty of the local committee to satisfy itself as to the trades in which augmentation is required in its district, and care must be taken to preserve a reasonable balance between the various crafts.

It has been suggested that in some places, particularly in large towns, local education authorities may be in a position to help in selecting youths likely to develop into capable craftsmen, and it may, therefore, be thought desirable to secure their co-operation in this work, either by co-opting on the committees for this special purpose representatives suggested by the local education authority, or otherwise. This matter is left for the consideration of the local committees and local education authorities concerned.

The Building Industry Committee has not thought it necessary to propose any particular form of indenture in the case of boys commencing their apprenticeship within the normal age periods, as forms for this purpose are already in existence in the various districts.

With regard, however, to the youths who will now commence their apprenticeship under this scheme, local building industry committees should secure that a probationary period of not less than one month at the approved rate of wages is completed by each apprentice prior to his being indentured. Such probationary period would count as part of the apprenticeship period and should be taken into consideration in fixing the date from which the formal Indenture operates. The Building Industry Committee has drawn up for the consideration of the parties concerned a special form of Indenture to meet the case of these apprentices.

A special provision has also been inserted to meet the needs of employers and apprentices in cases where building contracts cease before the end of the period of apprenticeship, and the employer has no other work in hand at the time in the same district upon which the apprentices can be trained. The local building industry committee will be required to give its assistance in such cases in the manner indicated in the indenture.

It should be clearly understood that this scheme for augmented apprentices is in addition to, and not in substitution for, any existing local apprenticeship schemes, and that arrangements should be made to secure such co-ordination as may be necessary. Existing apprenticeship indentures or agreements will not be affected by the proposal now made. The scale of wages for boys to be apprenticed in the future is a matter for separate consideration by the industry.

The Committee invites special attention to the particular recommendations in the Report regarding persons (*e.g.*, building trade labourers) who have a previous knowledge of the trade. It considers that such persons should become apprentices and to meet the case of these adult apprentices a special form of Indenture has been drawn up by the Committee. The Committee would be prepared to consider recommendations by local committees that adult apprentices should not be taken into account in particular areas in calculating the ratio of one apprentice to three craftsmen. In the opinion of the Committee the commencing rate of pay for such adult apprentices should be not less than the agreed rate for labourers in the district, and should be progressive.

In order to secure that the ranks of the skilled craftsmen in the building industry are augmented within the limits provided for in the Report, it is necessary that a register of apprentices should be prepared. This is a matter of considerable difficulty and the willing co-operation of all persons engaged in the industry is earnestly desired. It will also be necessary to prepare statistics at quarterly intervals showing the increase in the number of apprentices in the various categories throughout Great Britain during that quarter. Forms for this purpose have been prepared by the Building Industry Committee.

The absence of exact information should not in any way prevent the engagement of apprentices whether of normal age or above that age, and in particular it should not hinder the training of men over 20 who have already had experience of the building trade. Local building industry committees should accordingly make arrangements forthwith to secure that all builders undertaking contracts for the erection of houses for local authorities should in each case engage a number of apprentices in the ratio of one apprentice to every three craftsmen employed on such housing contracts. In choosing the apprentices special attention should, as indicated in the Report issued in April last, be given to the necessity of augmenting the skilled ranks of crafts in which a shortage is shown to exist, in order to secure the proper balance of the industry.

It will not be possible, except by agreement, to secure that apprentices in the ratio of one to every three craftsmen employed on house building contracts for local authorities are taken on where these contracts have already been let, but there should be little difficulty in securing this by agreement with the contractor in view of the necessity for augmentation. Local building industry committees are accordingly invited to get into touch with all contractors holding contracts for the erection of houses for local authorities and to ask them to arrange for the employment of apprentices in the ratio indicated. A convenient way of getting into touch with such contractors would be through the local authority or local authorities within whose limits the area of the local building industry committee falls. It is also suggested that the local committees should get into touch with builders not at present holding such housing contracts with a view to securing their co-operation in the same way.

Where local committees have not at their disposal suitable accommodation for meetings the Ministry of Labour will be prepared to arrange for the provision of such accommodation at Employment Exchanges, wherever possible, on receipt of an application by the Manager of the Exchange from the local building industry committee.

So far as apprentices of normal age at date of entry are concerned, there are in many areas arrangements already in force whereby crafts training is supplemented by training in technical classes either in the day time (by means of classes held on one or more half-days in the week) or in the evening. Local building industry committees are asked to consider in conjunction with local authorities and employers whether in places where day-time training is not at present given, steps can be taken to provide it. Similar arrangements probably cannot be made for giving day-time instructions to youths who do not become apprentices until after the normal age of entry, but it is considered that every inducement should be given to them to supplement their training by attendance at suitable evening classes where such are available. Local building industry committees are accordingly asked to give their attention to this matter and to consult local authorities and employers with a view to devising schemes which would be suitable for the localities concerned and to inducing the apprentices concerned to make use of the opportunities afforded thereby.

The local committees that have been set up may in some cases be found to cover too wide an area to make efficient and economical working possible. Local committees should bear in mind the necessity of arranging for the division of their areas so as to provide for the maximum amount of local knowledge consistent with the maintenance of an area sufficient to provide scope for the transfer of apprentices as required. Where group committees have been set up covering wide areas, with sub-committees for individual towns, the latter will be recognised by the Building Industry Committee as local building industry committees for the purpose of the scheme.

The Building Industry Committee desires to impress upon the local committees that the promises made to the Government, in regard to the carrying out of the Housing programme, have imposed a great responsibility, and that in order to carry out the undertaking given it will be necessary for local committees to secure that an adequate proportion of the resources of the industry in each district of Great Britain shall be definitely allocated to the work of housing.

Obituary.

The death took place recently of one of the best-known builders in the Cardiff district, Mr. John Littlejohns, of 11, Beauchamp-street, at the age of 79 years.

L.C.C. Housing.

The Kensington Borough Council recently stated they had received a letter from the London County Council intimating that as a tentative arrangement they are prepared during the ensuing twelve months to allot a definite proportion of the new housing accommodation to be provided by them to residents in each Metropolitan borough, and stating that they will be prepared to consider applications which may be submitted by borough councils for such accommodation.

BUILDING SCHEMES AND RESTRICTIVE COVENANTS

THE case of Kelly *v.* Barratt, which we noted January 25, 1924, has been carried to the Court of Appeal and is now reported 1924 2 Ch. 379. The facts are of extreme complication, and we set them out in our former notice of this case, and we can only now briefly indicate them.

The late Sir Spencer Maryon-Wilson was the owner of a large estate in Hampstead, and in 1877 he had agreed to sell portions of the same to two brothers, Kelly, who were acting as builders in partnership. It seems unnecessary to set out in detail the various provisions contained in the conveyance, the land appears to have been sold in one block, coloured pink on the plan, and it abutted upon each side of a road, Fitzjohns-avenue, at that time dedicated to the public by Sir Spencer, but not taken over by the road authority. The conveyance contained numerous covenants as to the value and character of the houses to be erected, the erection of boundary walls, etc., and a building line was prescribed, but the covenant material in this action was that no building which was erected should be used for any purpose other than for private residences.

It seems, however, material to point out that an option was given to the Kellys either to have one conveyance made to them of all the land comprised in the agreement on payment of the purchase money, or to have the land conveyed in separate portions, as payment was made on a fixed proportion to the purchase money. The agreement provided "every conveyance made to the purchasers shall be according to a model form marked 'A' and signed by the parties hereto as showing their approval thereof, but not by way of conveyance or assurance." There were two model forms, one for works not completed and the other for works completed, and in these model forms a covenant appeared as between any sub-purchaser and Sir Spencer, repeating the restrictive covenants contained in the original agreement. The Kellys had built some houses and sold them; in some cases the Kellys took a conveyance from Sir Spencer, but in others the sub-purchasers took the conveyance direct from him. Thus fifty-one houses were built in all, twenty-three of which were conveyed by Sir Spencer direct to the sub-purchasers, and twenty-eight by him to the Kellys; all the conveyances substantially followed the model form and in all the site or soil of the road was excepted.

The two houses with which this action was concerned had been conveyed by Sir Spencer to the Kellys, the date of the conveyance of the first (No. 40) was May 11, 1880, and of the second (No. 42) May 14, 1880. These conveyances contained the covenants entered into between Sir Spencer and the Kellys. These houses were conveyed by the Kellys to two purchasers and these conveyances appear to have referred to the covenants made in the two conveyances of May, 1880. There may have been intermediate dealings with the houses, but in or about the year 1922 the defendant had purchased both these houses, and she used them as a home for private patients, and this action was brought to restrain the premises from being used otherwise than as a private dwelling house.

The plaintiffs framed their case in three ways. First, it was said that the dealings by the Kellys with the land they had purchased from Sir Spencer were such as to constitute a building scheme under which all the purchasers from them intended to contract with them and with each other to abide by the various stipulations which were imposed on the sub-sale. In the Court below this contention was negatived on the ground that there was no evidence that the estate had ever been laid out in definite plots as part of a definite scheme or that the attention of any purchaser was ever called to the existence of a condition of things which would justify the inference that mutual obligations were intended to be imposed. This was one of the conditions laid down to be essential to the existence of a building scheme in Elliston *v.* Reacher (1908. 2 Ch. 374, *The Builder*, September 2, 1908), and there was no appeal over this point.

The second contention was that the sub-purchasers who took conveyances direct from Sir Spencer had constructive notice of the agreement between Sir Spencer and the Kellys, dated May 14, 1877, and that notice of that agreement taken with the form of the conveyances was sufficient evidence to enable a scheme to be inferred imposing mutual covenants between those sub-purchasers and the Kellys. The Court below had negatived this contention, and this point was one of the subjects of appeal.

In Elliston *v.* Reacher certain principles were laid down as essential to the creation of a building scheme, and the second of these conditions was "That previously to selling the lands to which the plaintiffs and defendants are respectively entitled the vendor must have laid out his estate, or a defined portion thereof (including the lands purchased by the plaintiffs and defendants respectively), for sale in lots subject to restrictions intended to be imposed on all lots and which though varying in details are consistent and consistent only with a general scheme of development." The Court of Appeal affirmed the Court below in holding that there was no such laying out of this estate as to satisfy the above condition. We may quote one passage from Lord Justice Warrington's judgment, "In my opinion there is no evidence here from which it is possible to infer an intention to create those reciprocal rights, for the reason to which I have already alluded, that Sir Spencer Maryon-Wilson, the common vendor from whom both plaintiff and defendant derive title had not sold the property in lots and created a scheme which was to apply to the purchasers of all the lots within the statement of the essentials of such a scheme as is described by Farwell J." That means in Elliston *v.* Reacher. Lord Justice Warrington also pointed out that the conveyances to the Kellys were conveyances of single plots of land with no reference in the conveyance to any other land.

A third point was raised on the appeal which we need not consider at length. Sir Spencer Maryon-Wilson, as representing his father, who had died, had been joined as a plaintiff because he, as the legal representative of the original covenantee, could enforce the covenant as against the defendant in respect of certain land retained by him, to wit, the soil of Fitzjohns-avenue, and the Court of Appeal on this point also affirmed the Court below on the ground that although the benefit of the restrictive covenants could be attached to the roadway before it was taken over by the local authority, the interest remaining, after it was taken over, was only in the subsoil and the restriction did not touch such interest as remained vested in this plaintiff.

The case is one of considerable complication and cannot be stated very clearly as regards the main question, that relating to the building scheme, but it may be of service if we attempt to summarise the law relating to this subject. In our former note we set out the four principles laid down in Elliston *v.* Reacher; they are: "It must be proved (1) that both the plaintiffs and defendants derive title under a common vendor." Then follows (2) set out above: "That previously to selling the lands to which the plaintiffs and defendants are respectively entitled the vendor laid out his estate, or a defined portion thereof (including the lands purchased by the plaintiffs and defendants respectively) for sale in lots subject to restrictions intended to be imposed on all the lots, and which, though varying in detail as to particular lots, are consistent and consistent only with some general scheme of development. (3) That these restrictions are intended by the common vendor to be and were for the intended benefit of all the lots intended to be sold, whether or not they were also intended to be and were for the benefit of other land retained by the vendor, and (4) that both the plaintiffs and defendants or their predecessors in title purchased their lots from the common vendor upon the footing that the restrictions, subject to which the purchases were made, were to enure for the benefit of the other lots included in the general scheme whether or not they were also to enure for the benefit of other lands retained by the vendors."

These principles were carefully considered by the Court of Appeal, and accepted by them as representing the law. The Master of the Rolls pointed out that in Reid *v.* Bickerstaff (1909, 2 Ch. 305, *The Builder*, July 10, 1909) it had also been held that the area must be so defined that the persons on whom the burden of the covenant is imposed must have some knowledge of the persons, or range of persons to whom their responsibility exists, and Lord Justice Warrington quoted a passage from Osborne *v.* Bradley (1903, 2 Ch. 446, *The Builder*, May 23, 1903): "Nor would it be reasonable for me to draw the inference that a number of persons or any one person coming in and buying intend, or intends to be, bound to an unknown number of unknown persons in respect of an estate which, so far as it has been sold, is undefined, and to undertake liabilities to them and to accept a corresponding benefit from them. Neither the persons nor the estate, nor the lots in respect of which these covenants are entered into or undertaken, are in any way stated. If it was intended that the vendor should himself be bound he would, of course, have entered into the covenant himself. The whole theory of these interdependent covenants appears to me to point to an arrangement made once for all either on a sale by auction, by conditions of sale stating the covenants and that other persons will enter into similar covenants, and a plan exhibited at the sale, or by a scheme entered into already by antecedent sales, the particulars of which are stated to the purchaser, and which are displayed upon a plan drawn upon the purchaser's deed."

On the cases it is only necessary to add that the Master of the Rolls pointed out that it was not necessary to find an express contract by the vendor and the several purchasers, but a scheme can be inferred from the nature of the transaction (Reid *v.* Bickerstaff (*ubi sup*) and Nottingham Patent Brick and Tile Co. *v.* Butler (1885, 15 Q.B.D. 261), and that the Court of Appeal referred to Spicer *v.* Martin (14 App. Cas. 12), a case in the House of Lords in which the opinion was expressed that the principle on which the Courts act in such cases should not be extended.

In conclusion, we would point out that this case which turned on the question whether interdependent covenants could be enforced against persons buying lots on the estate by reason of a building scheme must not be confused with cases where covenants have attached to the land and a direct nexus with the title can be shown as regards the persons to be bound. In the case under consideration Lord Justice Sargant particularly pointed out that the alternative forms of conveyance to be used under the head agreement were "carefully framed so as to avoid putting on the title the building agreement itself. They recite merely that there had been an agreement for sale, either subject to certain conditions which have not been performed down to the present time and the performance of which is to be continued in the conveyance, or that there has been an agreement for sale simpliciter, but there is no reference by date or parties to the particular agreement."

One further extract from Lord Justice Sargant's judgment may perhaps be useful: "But in the present case if we came to any other conclusion than that which I have stated and held that this was not a mere building agreement but a building scheme we should be introducing very great confusion into all or most of those ordinary building agreements

where the builder can take his conveyances in portions and where similar covenants are to be entered into by each purchaser with the freeholder. In such cases the ordinary result of the working out of the agreement is that at the end of the agreement the intermediate builder has been eliminated, and ultimately there are a number of purchasers each of whom is subject to the same obligations towards the original freeholder, but who are not subject, and have never been intended to be subject, to any additional mutual obligations *inter se*, such as are ordinarily directly aimed at in a building scheme but seem to me in this agreement to be as directly avoided."

A RATING ASSESSMENT DIFFICULTY

IT has recently been stated in *The Times* that the London Assessment Authorities have requested the Ministry of Health to introduce a Bill to deal with an important point in connection with the forthcoming quinquennial valuation of property in London. As we understand it the point, as explained by Mr. Edwin Evans, the President of the Property Owners' Protection Association, is as follows:—As regards houses within the Rent Restriction Acts there is reason to think that the Inland Revenue Authorities will press that the new assessments shall be based on the 40 per cent. increase in rent permitted by the Rent Acts, although only 15 per cent. is rent as distinguished from repairs, for unless they do so, thus assessing the properties at gross on the actual rentals paid, for Income Tax purposes the owners would receive a double benefit, seeing that under the provisions of the Finance Acts, 1923, the present statutory deductions for repairs have been increased since the war. But for rating purposes under the Valuation (Metropolis) Act, 1869, the statutory deductions for repairs remain as they were before the war and the Inland Revenue Authorities by Act of Parliament are compelled to adopt the gross value as fixed by the local authorities under that Act.

It thus appears that as the law stands an injustice must be done either way, and the remedy suggested by the conference of assessment authorities is that if the gross values are thus to be raised the maximum rates of deduction allowed by the Valuation (Metropolis) Act, 1869, for rating purposes should be brought more into line with the deductions allowed by the Finance Act, 1923. The Finance Act deals with three classes: (*a*) Where the amount of the assessment does not exceed £40 the deduction is one-fourth; (*b*) where it exceeds £40, but not £100, one-fifth; and (*c*) where it exceeds £100, twenty pounds, with a sum equal to one-sixth part of the amount by which the assessment exceeds £100.

It is suggested that the third schedule to the Valuation (Metropolis) Act as regards four classes should be remodelled as follows:—Class 1, where the gross value does not exceed £40, deduction one-third. Class 2, where it exceeds £40, but not £80, one-fourth. Class 3, where it exceeds £80, but not £150, one-fifth. Class 4, where it exceeds £150, one-sixth. Seeing how heavy the rates are at present, the point is a most important one and we hope it will receive immediate attention.

Public Utility Societies.

The National Committee of Public Utility Societies has now been re-elected, and is preparing a memorandum for submission to the Ministry of Health in the hope of obtaining certain concessions in order to assist building. It will, no doubt, be pointed out that better loan facilities are available in Holland and Belgium. The Committee now consists of Captain R. L. Reiss, Mr. W. McG. Eagar, Mr. E. G. Culpin, Mr. E. Hall Williams of Cardiff, Mr. L. P. Appleton, Mr. L. C. Wheatham, and Mr. A. T. Pike, the new Secretary of the Garden Cities and Town-Planning Association.

BOOK REVIEWS

The Law of Landlord and Tenant, including the Practice in Ejectment and Rent Restrictions. By JOSEPH HAWORTH REDMAN, of the Middle Temple, Barrister-at-Law. Eighth edition. (London: Butterworth & Co. 1924.) Price 50s.

Only about four years have elapsed since the last edition of this standard work appeared, which is in itself evidence of the position it occupies. The present edition comprises about 100 more pages than the 7th edition, and the author in his preface notes the legislative changes that have been effected in the interval, notably the Agricultural Holdings Act, 1923, The Allotments Act, 1922, and to quote the author's own words, "Four ill-digested and much litigated Statutes have been passed dealing with the vexed subject of rent and mortgage interest restriction, and more similar legislation is threatened." The author also in his Preface alludes to the decision of Calthorpe *v.* McOscar, with which our readers are familiar, as modifying the decision in Proudfoot *v.* Hart, and the cases which have dealt with the length of notices to quit in weekly and monthly tenancies; these and other subjects appear to have been brought well up to date in the present edition, and we find the one or two small deficiencies in references we drew attention to in noticing the last edition have been corrected in the edition now before us. So far we have only discovered one error in a reference, that on page 951, to the Prevention of Eviction Act which is referred to as at page 1,013, whereas it should be page 998. In the preface, however, we are informed that Mr. H. B. Bompas has carefully revised Chapters XII and XIII, but we are unable to find the latter chapter either in the Table of Contents or in the volume itself. From the context of the preface we imagine the reference intended is to appendix D, as Chapter XII and that appendix are devoted to the subject of rent restriction.

Although we have pointed out these trifling slips we must guard ourselves from giving any impression that the work has not been very carefully compiled, for so far as we have been able to test it, it is accurate, and we have found no omissions. Rent restriction is a subject very difficult to deal with in a general treatise on the law of landlord and tenant, as from the numerous Acts and the countless decisions upon their provisions it almost requires a volume to itself. The chapters relating to this subject contain some valuable notes, but we do not find the arrangement of this part of the work quite easy to follow for the purposes of a particular reference. In the appendix the principal Act is taken as the text and the amendments introduced by the Act of 1923 are annotated in different type, but we found it difficult to find a particular reference; for instance, we looked for section 2 of the Act of 1923 which decontrols certain houses and eventually found it in the notes to section 12 subsection (2) of the principal Act, which relates to the "Application and interpretation" of that Act, which does not seem to indicate the subject of decontrol. It would have been of assistance, we venture to think, if the whole text of the Act of 1923 had been given separately as well, with references to the notes on the sections of the principal Act, but we hope this suggestion will not be of use for a further edition, although editions of this work are called for very rapidly, for from the remarks we have quoted of the author in the preface we think he will agree with us in hoping rent restriction may be removed from the Statute Book, and consequently from his work before another edition is issued. Knowing the authority of the author we could have wished he had expressed an opinion upon the interpretation to be placed upon section 2 of the mysterious Prevention of Eviction Act, and its possible effect on section 2 of the Act of 1923, but he has only printed the text of this section without comment.

Rent restriction cannot be a permanent element in the law relating to landlord and tenant, and we fear we have given undue prominence to what is only a subsidiary feature in the present edition of this standard work on the law of landlord and tenant, but our excuse must be that there is little that is required to be said about this well-known and firmly established treatise except that this edition appears to have been brought thoroughly up to date and possesses all the features which have rendered its many predecessors such useful adjuncts to every law library.

Economics of Iron and Steel: Being an exposition of every-day practice in the heavy iron and steel trades. By H. J. SKELTON. Second edition. (London: Stevens & Sons, Ltd.) £1.

In the preface to the first edition the object of this book is "to facilitate the use of, and to promote commerce in, iron and steel," and later on it is stated that "the progress of competition is not favourable to the maintenance of a high standard of efficiency." This was written in 1891, since which date many things have occurred so that the original book has been in great part rewritten. For instance, the wrought-iron trade has diminished to almost insignificant proportions as compared with the output of steel. The author notes the good work done by the "British Engineers' Standards Association," in reducing the number of sections to a small number ranging over the ordinary requirements of engineers, thus effecting enormous reductions of time and cost to the manufacturer and user. Naturally, much time has been given to the economics of the trade, and a brief account is included of the effects of transport costs, import duties, the use of machinery, &c., upon the national position. One statement is noteworthy. The cost of transport from a German steel works on the Rhine, for steel rails, before the war, was by water to Rotterdam, 3s. per ton, and from Ruhrort to the Thames 8s. per ton; whilst on similar goods from South Wales the charge was 13s. per ton. At the present time the charge from South Wales is 19s. 10d. per ton. Later the author writes: "Looking at the position broadly, it would be of great advantage to the peace of the world if an international standard of working hours and wages, like pay for like work, could be introduced in the coal, iron and steel industries." The realisation of this dream is far away now, and the author gives the reason when he states that the efficiency of the workers has not improved since the war. Most of our troubles would, we venture to state, pass if only the workers would realise that each advance made in their social conditions demands the recognition by them of their responsibilities for a full day's output. Another remark of the author will probably meet with general approval of all those having commercial responsibilities, when he condemns "hasty political decisions that affect the complicated ramifications of modern industry and commerce."

This book consists of thirty-five chapters with 632 pages, and gives an enormous amount of information, much that may be useful to builders of framed structures. Standard sections, sizes, tolerances, gauges, sheets, &c., are given, with much matter concerning the manufacture of iron and steel from the ore, together with information on heat treatment, corrosion, and testing, concluding with a glossary of technical terms of frequent use when discussing qualities, &c., of the finished products. The book is very clearly printed, and well illustrated, and cannot fail to be of use to all who have to buy and use iron and steel products in any form. The Index is a good one, and in consequence of the size of the type and its open setting, extends from page 633 to 679; it would have gained in readiness when searching if it had been compressed to half its present number of pages.

NEW INVENTIONS

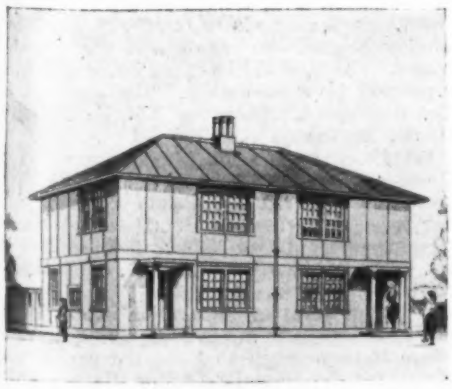
STEEL HOUSES.

A new type of all-steel house has been designed by Mr. J. C. Telford, O.B.E., M.I.C.E., managing director of Messrs. Braithwaite & Co. (Engineers), Ltd., in which no steel or wooden framework is required, the steel walls themselves being of box form and therefore self-supporting. No brickwork or plastering is required, and the houses can be occupied immediately they have been completed. A pair of these parlour-type houses, containing living-room, bath-room, kitchen, scullery, coal cupboard and three bedrooms, can, we are informed, be erected complete in eight days, the total cost, inclusive of foundations, drains, and so forth, being £425 per house. Walls, roofs, floors, linings, flues and the like are standardised, and despatched from the works out of stock and assembled on site.

Walls are formed of steel plates pressed in the form of a box, and bolted together by the turned-in flanges, thus giving a "T" formation. All plate sections are 3 ft. 6 in. in width, and are assembled side by side to form a double wall with a 6-in. cavity. Externally, the wall surfaces are painted stone colour and sanded before the paint has dried, the inner surfaces being treated with a bituminous compound to prevent corrosion and to give protection from the effects of condensation. Steel plates are used also for the roof, while the staircase is of pressed steel with wooden treads bolted on. Window frames are of steel, and these and the wooden door frames are built in as construction proceeds. As soon as the exterior walls have been assembled and the flitch beam supports for the upper floor are in position, the roof can be added and the remainder of the work carried on under cover, so that unfavourable weather conditions will not hamper progress.

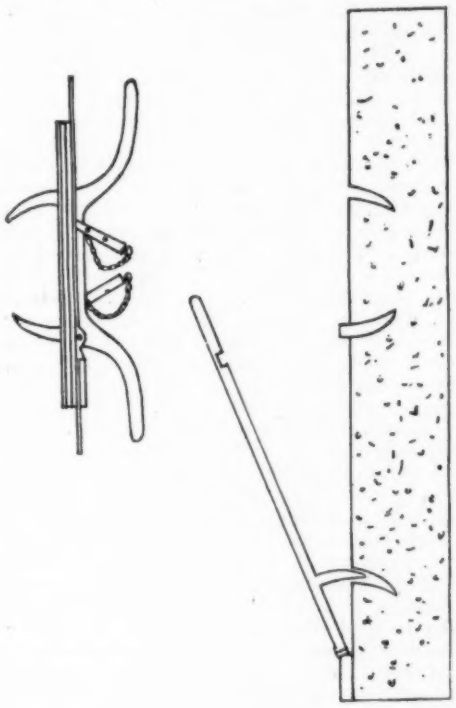
As soon as the ground has been cleared and levelled, a platform of concrete is laid down that projects 2 ft. beyond the area covered by the house, and in this platform holes are formed to take the fixing rag-bolts. When all the ground-floor sections, with window and door frames, have been assembled and bolted down to the platform, a horizontal tie sheet or stringer course is bolted to the section, tying the whole of the floors together at the first-floor levels. Flitch beam supports running the whole width of the structure are then raised into position and rest on the horizontal tie, the upper walls and roof being erected on this support.

For the internal lining, thick asbestos sheets are employed, secured to a light wooden framework, fastened to the internal wall sheets, from which they are separated by felting. Wooden fillets cover the joints between the sheets and give a panelled effect to walls and ceilings. These sheets may be painted, distempered or papered. Floor boards are used upstairs and are fastened to wooden fillets bolted to either side of the flitch beams. Cast-iron flues are enclosed within steel boxes, the heated air from which is free to circulate throughout the cavities in the walls and roof. Steel pipes for the water, gas and electric-light cables are attached to certain wall sections and are screwed together as the sections are assembled to form continuous lengths. Mr. H. E. Farmer, F.R.I.B.A., of Birmingham, who is the architect to Messrs Braithwaite, designed the houses illustrated herewith.



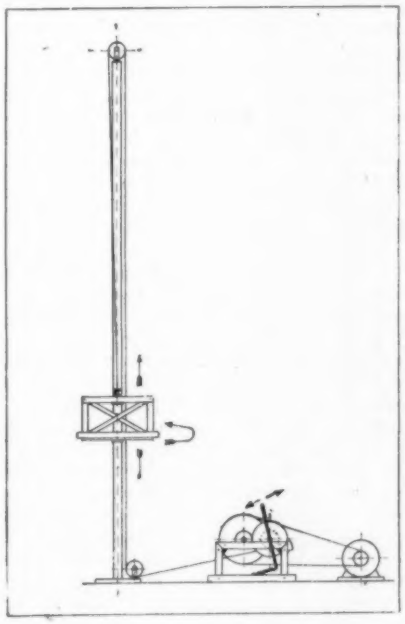
SHUTTERING ATTACHMENT.

The extractable claw for attaching concrete shuttering illustrated herewith has been patented by Mr. J. S. Phillips, of 288, Albany-road, S.E.5. The claw allows for ground support to be discontinued and lower boards superimposed as high as desired. It also prevents waste of timber by nailing, and saves carpenter work. As will be seen, it grips the concrete like a thumb and fingers, and provides holes for fixing facings after the boards are removed. The claws enable shutters of all kinds to cling to a wall face without dependence upon lateral fastenings.



A RAPID HOIST.

The vast new building work now taking place in Regent-street has, naturally, led to the employment of a number of new materials, methods, and appliances. Among the latter, one of the most interesting is a "Rapid Hoist," which has now been in operation for some time. It is made in two sizes, to carry 7 cwt. and 14 cwt. respectively. A height of 100 ft. can be erected without auxiliary plant inside or outside any building in four-and-a-half hours. It carries two barrows at a time and requires no top man. Builders, who are not, as a rule, unduly conservative, will appreciate what a daily saving of £ s. d. must result from the employment of this labour-saving device. During the recent fog building generally, so far as human labour was concerned, slowed up; but the mechancial efficiency of the "Rapid Hoist," which combines speed with simplicity, was not, apparently, in the least interfered with. The sole agents for Great Britain and Ireland are Associated Industries, 98, Great Russell-street, W.C. 1.



TRADE NEWS

The title of Messrs. Edward Le Bas & Co. has been changed to Le Bas Tube Co., Ltd. Offices: Dock House, Billiter-street, E.C.3.

Messrs. The Woco Door Co., Dashwood House, London, have recently issued a pamphlet and catalogue descriptive of their well-known Columbian pine doors. A series of excellent illustrations show the wide range of designs, with the consequent economy this entails, of Woco Doors. Manufactured from such wood as only the finest trees of Columbia can produce, we readily appreciate that not only can there be no question of shrinking or warping, but they combine two states which have sometimes been regarded as irreconcilable—the practical and the ideal.

Messrs. Cuirass Products, Ltd., have removed to Abbey House, Victoria-street (entrance Tothill-street), London, S.W.1.

With reference to our note of last week with regard to Messrs. The General Iron Foundry Co., Ltd., running their two factories under separate titles, they inform us that their warehouse business will be continued at Brook's Wharf, Upper Thames-street, E.C. 4, as heretofore, and includes builders' castings of all descriptions, including baths, ranges, stoves, hot water boilers (heating and domestic), radiators, rain, water, soil, and drain goods, manhole covers, gratings, gates, railing and stable fittings, plumbers' brass foundry, &c. Constructional steel work, including fire escape staircases, steel fire resisting doors, gangways, roof principals, &c., are manufactured at their "Gifco" Works, Hutchings-street, Millwall, E. (General Constructional and Engineering Co.). Steel sashes and casements, lantern lights, rod gearing, leaded lights, dome lights, &c., are manufactured at their "Gifco" Works, Brimsdown, Middlesex (General Steel Sash and Casement Co.). Head Office: 43, Upper Thames-street, E.C. 4, to which all communications should be sent.

Concrete Houses.

The Housing Committee of the Eastbourne Town Council recently recommended that a contract be entered into with Messrs. Boot & Son, Ltd., for the erection of 200 concrete houses, 50 non-parlour at £560 each, and 50 parlour at £606 each, on the Victoria-drive site, and the remainder on a site to be decided upon within two months. The houses will be eligible for the Government subsidy of £6 per house per annum for twenty years.

Thames Tunnel.

The Tilbury Urban Council are shortly to call a conference of all local authorities in the Thames area with a view to opposing the proposed tunnel under the Thames between Purfleet and Dartford, and are to urge as a more suitable scheme the construction of a tunnel between Tilbury and Gravesend.

NEW BUILDINGS IN LONDON

St. Helen's-place.—With reference to our description of this building in our issue of December 19, we regret we gave the name of the contractors as Messrs. Dove Bros., Ltd. The Leathersellers' Company, the building owners, inform us that it has not yet been decided who will be the contractors for this work.

Kensington, North.—A large site at North Kensington has been acquired for the new Princess Louise Kensington Hospital for Children. It is proposed to build a self-contained hospital accommodating 50 beds, with provision for easy extension. In addition, there will be facilities for out-patients' treatment, and a dispensary for women. A nurses' home will be added later as funds become available. The initial cost to be incurred in the purchase of the site, erection of buildings, endowment, professional charges, &c., is estimated at £80,000. The architects, acting in a joint capacity, are Messrs. J. T. Saunders, F.R.I.B.A., of 19, Linden-gardens, London, W.2, and George A. Lansdowne, F.R.I.B.A., of 9, Regent-street, W.1.

Oxford-street.—Work is about to start on the rebuilding of the well-known premises in Oxford-street, W.1, known as Buszard's, and owned by the Aerated Bread Co., Ltd., of Camden Town, N.W. It is intended to reconstruct it, introducing modern equipment and design. The front of the premises will be used as shop and showrooms, whilst the rear of the ground floor and the whole of the upper floors will be utilised as restaurants. Kitchens will be established on the ground and basement floors. New fittings and furnishings will be installed, whilst new systems of heating and ventilating, electric lighting, &c., will be introduced. Mahogany and oak will be used for the interior woodwork, whilst the shop fronts will be of metal. The general contractors are Messrs. Leslie & Co., Ltd., of Kensington-square, London, W.8. The architects are Messrs. William Woodward & Sons, of 15, Great James-street, W.C.1. Work is expected to be completed by the autumn.

Bayswater.—New school buildings for girls and infants are to be erected at Westmorland-road, Bayswater, W.2, for the Church of St. Mary [of the Angels. The premises will be of red brick with stone dressings, of two stories, providing accommodation for about 250 scholars, with separate entrances for girls and infants into their separate playgrounds. The floors will be of wood, with a flat roof of asphalte or concrete, to be also used as a playground. The partitions will be of wood partially glazed, and will be of the sliding type. A central heating system, with radiators, will be installed, and electric light will be used. The general contractors are Messrs. E. A. Roome & Co., Ltd., of 7, Urswick-street, London, E.9. The architect is Mr. E. Harry Major, of 2, John-street, Bedford-row, W.C.

Gerrard-street.—Alterations and improvements are to be made to the premises at 41, Gerrard-street, N.1, known as the "Gerrard Arms" public house, owned by Messrs. The Camden Brewery Co., Ltd., of Camden Town, N.1. Alterations are to be made to the licensed and domestic quarters of the building. New fittings and equipment are to be put in and the entire building decorated, internally and externally. Electric lighting will be installed. The plans have been prepared by Mr. A. E. McEwan Waghorn, of 8, King William-street, E.C.3.

Great Winchester-street.—The British Petroleum Co., Ltd., are vacating 23, Great Winchester-street, E.C., and not the Anglo-American Oil Co., as stated in our issue of January 2.

Tooting.—A row of shop premises is to be erected on the site at the corner of Mitcham-road and Bickersteth-road, Tooting, S.W. The plans, prepared by Messrs. North, Robin & Wilsdon, F.R.I.B.A., of 35–39, Maddox-street, London, W.1, show eight shops each with a frontage of 20 ft. and a depth of 40 ft. The premises will consist of shop, shop parlour, showrooms, lavatory, &c., and will be of the lock-up type. The builders are Messrs. Bovis, Ltd., of 43, Upper Berkeley-street, W.1.

Finchley.—Extensive alterations are to be made to the well known "Bull and Bush" public house at North End, Finchley, N.W., and plans have been recently approved by the local magistrates. It is proposed to cut away part of the interior of the building and to build a new club room on the first floor. Provision will be made for improved access and a re-arrangement of the other parts of the house, including the bars, is aimed at. On each side of the large room on the first floor will be smaller rooms to be used for staff quarters. The whole of the work will be redecorated, and the woodwork and joinery will be in selected hardwoods. The architect is Mr. R. Banks-Martin, of 121, Plashet-grove, East Ham, E.6.

Ilford.—A contract has just been placed for the building of a new Wesleyan Methodist church on a site at the corner of Bennett's Castle-lane and Haydon-road, on the Becontree Housing Estate. The new buildings will include a church and Sunday schools. The plans show an edifice of hand-made bricks relieved by stone dressings. The roof will be tiled. Steel will be used to carry the roof load and also a gallery on three sides of the building's interior. The walls will be of plaster plainly decorated. The roof will be of wood inside with ventilator vents. The school buildings will comprise sections for senior and junior classrooms, church parlour, and primary hall. The floors in both buildings will be of wood. Heating apparatus will be installed, and the lighting will be by electricity. The builders are Messrs. H. Somerford & Son, of Manor-street, Clapham, London, S.W.4. The plans, which will entail an outlay of about £20,000, have been prepared by Mr. George E. Withers, F.R.I.B.A., of 50, Cannon-street, E.C.4.

Holloway.—The Holloway County School is to be considerably enlarged, at a cost of about £25,500. The plans show the following accommodation to be provided: Four class-rooms, each to hold 30 pupils; library; art room; manual training room; assembly hall; gymnasium, 2,250 ft. super., including platform and gallery; administrative building; kitchen; scullery; headmaster's room; secretary's room; female and male staff rooms; stock room; porter's room; heating chamber; fuel store (in basement) and cycle shed. The preparation of working drawings, specifications and quantities, is now in hand. The architect is Mr. G. Topham Forest, F.R.I.B.A., architect to L.C.C.

Leicester-square.—The Cavour, Ltd., of Leicester-square, W. 1, intend to pull down their present property, and to build an entirely new restaurant. Plans are to be prepared for a large building with a frontage of about 70 ft. to Leicester-square and stretching back to Charing Cross-road. There will be four stories above ground level with a large basement below. The principal floor—the ground floor—will accommodate a large reception lobby and entrance foyer leading into the main restaurant. This hall will be equipped with an orchestra platform and stage for cabaret, and will also have a specially-laid dancing floor. In the basement, there will be a large swimming bath with a gymnasium attached. The bath will be constructed in reinforced concrete and will be lined throughout with glazed tiles and bricks. On the first floor there will also be a large dining-hall; whilst the remaining upper floors will be divided up into private dining-rooms, club rooms, bars, &c. On the roof will be a roof garden, also with a dance floor and facilities for concert parties. The building will be built on a steel frame with an ornamental front, all the floors being fireproof. Passenger lifts and extensive kitchen plant will be installed, also electric lighting, central heating, &c.

Regent-street.—The range of buildings situated at Nos. 84, 86 & 88, Regent-street are about to be pulled down under the reconstruction scheme of the Office of Works and Forests. A lease of eighty years has been granted to the present tenants, Messrs. Hope Bros., Ltd. The frontage is about 70 ft., whilst the building will attain a height of seven stories. Steel frame construction is to be employed with an outer covering of Portland stone. The roof will be of Mansard type, set back in line with the adjoining new building, and will contain the top story. The shop and display fronts will be of hardwood and bronze, whilst the interior fittings will be of oak and mahogany. The window casements on the upper floors will all be of cast-iron or steel type. The floors will be of fireproof construction, and will all be finished with asphalte or concrete. A separate entrance will be provided with a battery of lifts. The building will be equipped throughout with electric lighting, heating apparatus of low-pressure hot-water system, electric bells, and fire and burglar alarms. Marble will be introduced into the interior decorations, whilst art metal work will be used for the principal elevation and for lift enclosures, railings, balustrades, &c. The roof will be covered with green Westmorland slates. The architects are Messrs. Gunton & Gunton, of Finsbury House, Blomfield-street, E.C. 2.

Victoria.—A few months' time will see the pulling down of the old premises at the corner of Vauxhall Bridge-road and Wilton-road, S.W. 1, preparatory to the erection of a large modern block of premises. The freehold of this site was jointly purchased some years ago by the Aerated Bread Co., Ltd., and Messrs. Watney, Combe, Reid & Co., Ltd., brewers, with the object of re-building after the present leases ran out The "Windsor Castle" public house, which stands at one corner of the site, is to be replaced by a modern restaurant of five stories and extensive basements, flanked on either side with blocks of shops and offices. At the other corner of the site, the Aerated Bread Co. will build a new depot and tea rooms on their present depot site, and the whole scheme will evolve a new block covering a large area and accommodating shops of all kinds, office accommodation, &c. The architectural details are now being worked out by Mr. Malcolm T. Saunders, for the brewery company; and by Messrs. William Woodward & Son, of St. James-street, W.C. 1, for the Aerated Bread Co. Negotiations with the London County Council as to pavement lights, cellar flaps, road widening, &c., are now being carried on.

Hackney.—A new building is to be erected on a site in Hackney-grove, E. 8, for use as a mission hall. It will be of one story, constructed of brick on a steel framework, with a roof of asbestos-cement tiles. The general contractors are Messrs. Barrett & Power, of Lime-grove, E.9; whilst the steelwork is being supplied by Messrs. H. Young & Co., Ltd., of Nine Elms Ironworks, S.W. 8. The architects are Messrs. Wrattan & Godfrey, 18, Queen Anne's-gate, S.W. 1.

Bond-street.—The London Electric Railways Co. have decided to reconstruct the Bond-street "Tube" station, and also to convert the present ground floor into a shopping arcade. The new booking station will be fitted up in the basement of the present building and will have a tiled roof, cement and tiled walls, light oak joinery and fittings. The area will be over 3,000 sq. ft. The arcade will consist of about twelve shops, with an entrance into Oxford-street. Each shop will be fitted with art metal window fronts with equipment for various trades. The floor will be of reinforced concrete, supported by steel girders. The architect is Mr. Stanley A. Heaps, of Electric Railway House, Broadway, S.W. 1.

Ilford.—A site of about 14,000 square feet in Green-lane and Bennett's Castle-lane has been acquired for the erection of shop premises, with flat accommodation above. The site has a street frontage of over 300 ft. The architect is Mr. E. Meredith, A.R.I.B.A., of 7, Goodmayes-road, Ilford, Essex.

Southampton-row.—Excavation work is in progress on the site in Southampton-row, W.C., where it is proposed to build the new Royal Hotel, for the Imperial London Hotels, Ltd., Russell-square, W.C.1. The site has an area of about 100,000 square feet. The new building will be six stories in height, and when completed, according to present plans, will contain 2,000 rooms and 20 shops along the ground floor frontage. There will be extensive public rooms, dining-rooms, &c., and each bedroom or suite

will be equipped with hot and cold water, telephone, &c. Excavation is being carried out by Messrs. Willmott Bros., Baltic Wharf, Waterloo Bridge, S.E.1, whilst the building work will be carried out by administration under the direction of the company's surveyor.

Fenchurch-street.—A large site in Fenchurch-street, on the junction of Billiter-street, E.C.3, is to be covered by a modern office building, to plans prepared by Messrs. Gunton & Gunton, of Finsbury House, Blomfield-street, E.C.2. The new building will be of steel frame and brick construction, with reinforced concrete floors and an elevation of stone. There will be a large basement, surmounted by six upper floors. A lift will be provided to give access to the upper stories, which will be let off as offices. Shops will occupy part of the street frontage on the ground floor. The roof will be tiled. Electric lighting and central heating systems will be installed. Excavation work, preparatory to the putting in of the foundations, has been commenced by the general contractor, Mr. F. G. Minter, of Ferry Works, Putney, S.W.

Jermyn-street.—The clearing away of the remains of the old Cox's Hotel, in Jermyn-street, W.1, is now practically completed, and building will start soon on a new block of residential flats and chambers on the same site. The new building will be of six stories in height, with a basement, and will have shops on the ground floor. The site covers a considerable area, and the rear of the building will be partly in white glazed brick. Each suite of rooms will be self-contained, and there will be access by lift to each floor. Each floor will be of fireproof material, as also will be the staircase. Steel sashes and window frames will be inserted, whilst a central heating plant and hot-water installation, gas fires, electric lighting, telephones, and other facilities will be available. The architects are Messrs. Yates, Cook & Darbyshire, of 43, Great Marlborough-street, London, W.1.

Harley-street.—An appeal for funds is being made for the making of additions to the Queen's College at 43, Harley-street, W.1. Adjoining premises have been purchased, and it is proposed to demolish these and build a modern block of quarters, comprising new lecture rooms and laboratories, accommodation for resident students, &c. The total cost of the projected building and its equipment is put at £25,000. The new addition will resemble in architectural treatment and materials the existing college buildings, and plans have been prepared by Messrs. George Lansdowne & Brown, architects, of 9, Regent-street, W.1.

St. James's.—A large block of shops and chambers is to be erected on a site at the corner of St. James's-street and Regent-street, W.1, with extensive frontages to both streets. It is intended to proceed with the building in sections, and work on the excavations for the first portion, which will face St. James's-street, is now in hand. A steel framework will support the building and a stone and brick frontage will be shown, with shops on the ground line. There will be, including basements, about eight floors in all. Accommodation for a heating plant, coals and stores will be afforded by the lower floors. Lifts will be provided to reach all floors, and electric lighting and power for bells, &c., will be laid on. The roof will be sloped back, containing the top stories, and will be slated. The general contractors are Messrs Arthur Vigor, Ltd., of 20, Knightsbridge, S.W. The architect is Mr. George Vernon, of 22, Conduit-street, W.1.

Golden-square.—In view of the proposed widening of Tower-hill, London, E.C., it has been decided by Messrs. Huggins & Co., Ltd., of Broad-street, Golden-square, London, to rebuild and set back to the new frontage their licensed property, the "Crooked Billet" public-house. Plans have been prepared for a new building, erected in brick, providing improved accommodation for bars, refreshment and dining-rooms, staff and domestic quarters, &c. Two upper floors will be built, to be used as a manager's residence. An attractive half-front will be set up, and the roof will be of hand-made tiles. The contract has been placed with Messrs. E. A. Roome & Co., Ltd., of 7, Urswick-street, E.9. The architect is Mr. A. Burr, F.R.I.B.A., of 85, Gower-street, W.C.1.

RATES OF WAGES IN THE BUILDING TRADE

Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.

	Masons.	Bricklayers.	C'p'ters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bath	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bedford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Birkenhead	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Birmingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bournemouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Brentwood	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bridgwater	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Brighton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Burton-on-Trent	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Cambridge	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chatham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chelmsford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Colchester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dudley	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
E. Glam. (Mon. Vall.)	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Eastbourne	1/5	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Exeter	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Grays	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/3½
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Great Yarmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Guildford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hastings	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hereford	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ipswich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Lancaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Lichfield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Liverpool	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
London { 12 m. radius	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/4½
London { 12-15 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Luton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Maidstone	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Norwich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oxford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Plymouth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3½
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Portsmouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Reading	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Rochester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Rugby	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
St. Albans	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
St. Helens	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Scarborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Southampton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Southend-on-Sea	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stoke-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stroud	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5	1/1½
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swindon	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Taunton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/2½
Torquay	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Tunbridge Wells	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Walsall	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Windsor	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
York	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½

(For rates of wages in the Building Trade in Scotland, see page 126.)

CONTRACTS, COMPETITIONS, &c.

Forsome contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

JANUARY 17.—**Rotherham.**—HOUSES.—Erection of a further 500 houses on Section "F" of the Eastdene estate, for the County Borough of Rotherham. Mr. Chas. A. Broadhead, architect, "Devonshire House," Moorgate, Rotherham. Deposit £2 2s.

JANUARY 17.—**Wednesbury.**—PAVILION.—For erection of a new pavilion and latrines, in the Brunswick, Park, for the C.B. Mr. W. H. Pollitt, Town Clerk, Town Hall. Deposit £2 2s.

JANUARY 19.—**Barnsley.**—SCHOOL.—For erection of a new church and Sunday school at Silkstone Common, for the Primitive Methodist Church. Messrs. Crawshaw & Wilkinson, architects, 13, Regent-street.

JANUARY 19.—**Billericay, Essex.**—NEW INFIRMARY, &c.—Erection of a new infirmary (70 beds), administration block, and operating theatre, on a site adjoining the Workhouse at Billericay, Essex, for the Guardians of the Billericay Union. Mr. Walter Lawrance, F.S.I., 13, Hart-street, Bloomsbury-square, W.C.1. Deposit £3 3s., with the Clerk to the Guardians.

JANUARY 19.—**Birmingham.**—ALTERATIONS.—For alterations and additions at the Selly Oak Hospital, to provide new nurses' dining room, new kitchen, staff dining-rooms, &c., for the B.G. Mr. J. Curtis, Clerk to the Guardians, Union Offices, Edmund-street. Deposit £10 10s.

JANUARY 19.—**Carlton.**—CONVENIENCE.—For erection of a public urinal, Main-street, for the U.D.C. Mr. E. W. Turpin, Clerk. Deposit £1 1s.

JANUARY 19.—**Carnarvon.**—HOUSES.—Erection of 22 houses, for the Carnarvon Corporation. Mr. Rowland Lloyd Jones, architect, 14, Market-street, Carnarvon.

JANUARY 19.—**Dublin.**—SWITCH-ROOM.—For erection of an electric switch-room at Amiens-street Station, for the Directors. Mr. J. B. Stephens, Secretary, Amiens-street Station. Deposit £2 2s.

JANUARY 19.—**Felixstowe.**—HOUSES.—Erection of 38 houses in St. Andrew's-road, within the Felixstowe U.D.C. Mr. Harry Clegg, Engineer and Surveyor to the Council, Town Hall, Felixstowe.

JANUARY 19.—**Greenock.**—PAINTING.—For painter work required at Cowdenknowes housing scheme, for the Corporation. Mr. A. Nimmo, Town Clerk. Deposit £1 1s.

JANUARY 19.—**Hitchin.**—ALTERATIONS AND ADDITIONS.—Alterations and additions to Hitchin Union Infirmary, for the Guardians of the Hitchin Union. Mr. A. E. Passingham, Clerk, 5, Bancroft, Hitchin. Deposit £2 2s.

JANUARY 19.—**Leek.**—REBUILDING.—For taking down and removal of the Derby-street weighing machine house and underground convenience, and its re-erection, together with a ladies' convenience, in Haywood-street, for the U.D.C. Mr. W. E. Beacham, Surveyor to the Council, Town Hall.

JANUARY 19.—**London, W.4.**—SUPPLY OF STORES AND WORK.—To contractors, merchants, and others. Execution of work and supply of stores (separately), for the Chiswick U.D.C. Mr. Edward Willis, Engineer and Surveyor, Town Hall, Chiswick, W.4, by sending stamped addressed envelope.

JANUARY 19.—**Newsome.**—PAINTING.—For painting and decorating the inside of hall, Bower Sunday School. Mr. F. Sheard, 13, Jackroyd, Newsome.

JANUARY 19.—**Pontllanfraith.**—ALTERATIONS.—For alterations to existing buildings for conversion into a mining centre, for the Monmouthshire E.C. Mr. J. Bain, F.R.I.B.A., County Hall, Newport. Deposit £1 1s.

JANUARY 19.—**St. Albans.**—COTTAGES.—Erection of first 50 cottages at the Camp housing site. The 50 cottages will be divided into four contracts—three of 12 cottages, and one of 14 cottages. Contractors may tender for one or more sections, but separate tenders must be sent in for each, for the Corporation of the City of St. Albans. Mr. F. T. Negus, City Engineer and Surveyor, 96, Victoria-street, St. Albans. Deposit £1 1s.

JANUARY 19.—**Sheffield.**—PAINTING.—For internal painting work required to be done at King Edward VII Hospital, Rivelin, for the T.C. Mr. F. E. P. Edwards, City Architect, Town Hall.

JANUARY 19.—**Staveley.**—SCHOOL.—For erection of a new Council school for about 680 children, for the Derbyshire E.C. Mr. G. H. Widdows, F.R.I.B.A., Architect to the Committee, County Offices, St. Mary's Gate, Derby. Deposit £1 1s.

JANUARY 19.—**Wolverhampton.**—HOUSES.—For erection of 100 houses, Showell Farm estate, for the C.B. Mr. G. Green, M.Inst.C.E., Borough Engineer, Town Hall. Deposit £2 2s.

JANUARY 19.—**Wombwell.**—HOUSES.—Erection of sixty type "A" houses, on a site situate in King's-road, Wombwell, for the Wombwell U.D.C. Mr. D. H. Roberts, Park-street, Wombwell. Deposit £2.

JANUARY 20.—**Bootle.**—HOUSES.—For separate trades, excavator, concretor and bricklayer, drainer, carpenter and joiner, slater, plasterer, plumber and hot-water engineer, glazier and painter in the erection of eight houses of the non-parlour type, four houses in pairs, to be erected in Marmion-avenue, for the C.B. Mr. J. Spencer Tumilty, Town Clerk, Town Hall. Deposit £2 2s.

JANUARY 20.—**Cardiff.**—ELEMENTARY SCHOOL.—Erection of an elementary school on the Plymouth Wood-road, Ely, Cardiff, for the City of Cardiff E.C. Mr. Peirson Frank, Architect to the Education Committee, City Hall, Cardiff. Deposit £2 2s. (payable to the City Treasurer).

JANUARY 20.—**Ilkley.**—FENCING.—For the erection of boundary wall and fencing to playing field at Ilkley, Ben Rhydding Council school, for the West Riding E.C. Education Department, County Hall, Wakefield.

✱JANUARY 20.—**Kingston-on-Thames.**—ARTIFICERS' WORKS.—Artificers' works contract for repairs and materials from February 12, 1925, Contract 2, Kingston-on-Thames, including Hampton Court Barracks. War Department Contract. Commanding Royal Engineer, Royal Engineer Office, New-road, Woolwich, S.E.18.

JANUARY 20.—**Manchester.**—HOUSES.—Erection of from 4 to 200 houses on the Blackley estate (south-west of Plant Hill-road, and near Symonds-road), such number to be clearly set out on tender submitted, for the Housing Committee of the City of Manchester. The Housing Director, Town Hall. Deposit £2 2s.

JANUARY 21.—**Dyce.**—FACTORY.—For the brick-carpenter, asbestos, slate, steel, plumber, plaster and tile, and painter and glazier works of new factory for the Aberdeenshire Bacon Curing Factory, Ltd. Messrs. Jenkins & Marr, Surveyors, 16, Bridge-street, Aberdeen.

✱JANUARY 21.—**Hythe, Kent.**—COTTAGES.—Erection of 14 cottages in Cinque Ports-avenue, for the Borough Council of Hythe, Kent. Mr. J. L. Seaton Dahl, F.R.I.B.A., Radnor Chambers, Folkestone. Deposit £2 2s.

JANUARY 21.—**Llanon (Cards).**—HOUSE.—Erection of a house at Tynewydd, Nebo, Llanon. Particulars, Rhiw-Wen, Cross Inn, Llanon.

JANUARY 21.—**Port Talbot.**—HOUSES.—For the erection of 14 houses at Mount View-street, Aberavon, and construction of roads and laying of 9 in. sewers, for the C.B. Mr. M. Thomas, Town Clerk, Aberavon.

JANUARY 21.—**St. Andrews.**—PAINTING.—For painter work of 50 houses being erected at the St. Mary's-street housing site, for the T.C. Mr. J. Cargill Cantley, Joint Town Clerk, St. Andrews.

JANUARY 21.—**Sussex.**—POST OFFICE.—Erection of a Post Office, &c., at Crowborough, Sussex, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (Cheques payable to the Commissioners of H.M. Works, &c.).

JANUARY 22.—**Altofts.**—HOUSES.—For erection of a number of non-parlour houses. Mr. T. H. Hailstone, Council Offices, Altofts, near Normanton.

JANUARY 22.—**Bristol.**—ALTERATIONS.—For work required in extending and altering offices at Queen-square, for the Port of Bristol. Messrs. W. S. Skinner & Sons, architects, 27, Orchard-street. Deposit £3 3s.

JANUARY 22.—**Cadoxton-Barry.**—STORE.—For erection of a new branch, for the Barry District Co-operative Society. Committee of Management, Co-operative Society, Barry.

JANUARY 22.—**Guildford.**—HOUSES.—For four blocks of flats and a pair of houses to be built at Grange-road, for the C.B. Mr. W. G. Cross, Borough Engineer and Surveyor, Municipal Offices, Tuns Gate.

JANUARY 22.—**Huddersfield.**—PAINTING.—For painting of the interior and exterior woodwork and ironwork, &c., at the Bradley Wood Sanatorium, for the C.B. Mr. J. Henry Field, Town Clerk, Town Hall.

JANUARY 22.—**London.**—ROOFING WORK.—Renewal of roofing, skylights and gutters, and repainting, &c., at the locomotive and carriage works, Oswestry, for the Great Western Railway. Mr. A. E. Bolter, Secretary, Paddington Station, London, endorsed "Tender for Roofing, &c.," Oswestry.

JANUARY 22.—**London, W.**—TELEPHONE EXCHANGE.—Erection of telephone exchange at Maida Vale, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s. (cheques payable to the Commissioners of H.M. Works, &c.).

JANUARY 23.—**Chelmsford.**—HOUSES.—For erection and completion of 100 houses on the Boarded Barns estate, for the C.B. Mr. G. E. Barford, Town Clerk, Municipal Offices. Deposit £2 2s.

JANUARY 23.—**Dalkey.**—HOUSES.—For erection of a number of houses at Castle Park-road, Dalkey. Messrs. Kaye Parry & Ross, architects and C.E.'s, 48, Kildare-street, Dublin. Deposit £2 2s.

JANUARY 23.—**Glasgow.**—EXCHANGE.—For erection of Finnieston Employment Exchange (hutted scheme) for H.M.O.W. Secretary, H.M. Office of Works, Storey's Gate, S.W.1.

JANUARY 23.—**Hampton Court.**—ADDITIONS.—For additions to lavatories at Hampton Court, for H.M.O.W. Secretary, H.M. Office of Works, King Charles-street, S.W.1. Deposit £1 1s.

JANUARY 23.—**West Bromwich.**—ALTERATIONS.—For alterations and repairs at the Institution, Hallam-street, for the B.G. Mr. A. H. Ward, clerk, 22, Lombard-street. Deposit £3 3s.

JANUARY 23.—**West Bromwich.**—TRADES.—For builders' work at the Institution, Hallam-street, for the B.G. Mr. A. H. Ward, clerk, 22, Lombard-street. Deposit £3 3s.

JANUARY 23.—**Yorks.**—POST OFFICE.—Erection of a Post Office at Hebden Bridge, Yorks, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (Cheques payable to the Commissioners of H.M. Works, &c.).

JANUARY 24.—**Huddersfield.**—ALTERATIONS.—For building alterations at the Milnsbridge New-street Council school, for the West Riding E.C. Mr. W. Heeley, Divisional Clerk, 4, Macaulay-street.

JANUARY 24.—**Kirbymoorside.**—HOSPITAL.—For trades in the erection of orthopædic hospital, road-making and drainage, carpenter and joiner, plumber and glazier, for the Committee. Messrs. Garside & Pennington, architects and surveyors, Ropergate, Pontefract. Deposit £2 2s.

JANUARY 24.—**Rhos.**—HALL.—For erection of a new public hall and miners' institute at Rhos, near Wrexham. Messrs. J. Owen & F. A. Roberts, architects, Westminster Bank Chambers, Wrexham. Deposit £2 2s.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Brick-layers.	Car-penters, Joiners.	Plas-terers.	Slaters.	Plum-bers.	Painters.	Brick-layers' Labourers.	Plas-terers' Labourers.
Aberdeen	1/8	1/8½	1/8	1/8	1/8	1/8	1/7	1/0½	
Airdrie	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3	
Alexandria	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2½ to 1/3½	
Arbroath	1/7	1/7	1/7	1/7½	1/7	1/7	1/5½	1/1½	
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3	
Bathgate	1/8	1/8	1/8	1/8½	1/8	1/8	1/6½	1/2 to 1/3	
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-	
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Coatbridge	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3 to 1/3½	
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½	
Dumfries	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2	
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3	
Dunfermline	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3½	
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½	
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½	
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2	
Galashiels	1/6½	1/5½	1/6½	1/6½	1/6½	1/6½	1/6	1/2	
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½	
Greenock	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/0½ to 1/3½	
Hamilton	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½	
Hawick	1/6	1/6	1/6	1/6–1/6½	1/6	1/6	1/6	1/2	
Helensburgh	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½	
Inverness	1/5	—	1/4½	1/4	1/5	1/5	1/4	11d. to 1/2	
Kilmarnock	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½	
Kirkcaldy	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3½	
Kirkwall	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/-	
Lanark	1/8	1/8	1/8	1/9	1/8	1/8	1/6	1/- to 1/3	
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½	
Motherwell	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½	
Perth	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3	
Stirling	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3½	
Stirlingshire (Eastern District)	1/8-1/10	1/8-1/10	1/8	1/9	1/7	1/8	1/6½	1/3½	
Wishaw	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 125

JANUARY 24.—**Westhampnett.**—HOUSES.—For the erection of 42 houses proposed to be built by the R.D.C. Mr. W. D. Rasell, Clerk to the Council, Council Offices, Pallant House, Chichester.

JANUARY 24. — **West Hartlepool.** — TELEPHONE EXCHANGE.—Erection of a telephone exchange at Baltic Chambers, West Hartlepool, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (Cheques payable to the Commissioners of H.M. Works, &c.).

✱JANUARY 26.—**Bristol.**—ENLARGEMENT OF GOODS STATION.—Enlargement of goods station at Temple Meads, Bristol, for the Great Western Railway Co. The Engineer, Paddington Station, London, between the hours of 10 a.m. and 4 p.m.

✱JANUARY 26.—**Cardiff.**—RETAINING WALL.—Construction of a retaining wall, subways and other works at Queen-street Station, Cardiff, for the Great Western Railway Co. The Engineer, Paddington Station, London, between the hours of 10 a.m. and 4 p.m.

JANUARY 26. — **Edinburgh.** — ALTERATIONS. — For alterations, &c., to St. Andrew's Post Office, for H.M.O.W. Secretary, Storey's Gate, S.W.1.

JANUARY 26.—**Rowley Regis.**—HOUSES.—For erection of 16 houses, making-up roadway to proper level, &c., for the U.D.C. Mr. D. Wright, Clerk to the Council.

JANUARY 26.—**Stanley.**—HOUSES.—For erection of 20 houses on Shield-row housing estate, for the U.D.C. Mr. J. Hamilton, Clerk to the Council, Council Offices, Stanley, Co. Durham. Deposit £2 2s.

JANUARY 26.—**Stalybridge.**—POWER STATION.—General builder's work in the superstructure of the proposed Hartshead Power Station, Stalybridge, including turbine beds and brickwork setting to economisers, for the Stalybridge, Hyde, Mossley, and Duninfield Tramways and Electricity Board. Messrs. W. H. George & Son, architects, 7, Warrington-street, Ashton-under-Lyne. Deposit £1 1s.

JANUARY 26.—**Upper Cwmtwrch.**—HALL.—For erection and completion of a concert hall and institute, together with a river wall and other preliminary works, for the Miners' Welfare Committee. Mr. T. E. Williams, Secretary, Cliff House. Deposit £2 2s.

JANUARY 26.—**York.**—HOUSES.—For erection of 86 brick houses of the non-parlour type, at the Heworth housing estate, for the T.C. Mr. F. W. Spurr, architect, Guildhall. Deposit £2 2s.

JANUARY 27.—**Durham.**—SCHOOL.—For erection of a new Council school at Delves-lane, for the E.C. A. J. Dawson, Director of Education, Shire Hall, Durham.

JANUARY 27.—**Eastleigh.**—HOUSES.—Erection of 58 houses, being first instalment of a scheme for 220 houses on the Council's housing site, Winchester-road, Eastleigh, for the U.D.C. The Surveyor, Offices of the Council, Leigh-road, Eastleigh.

JANUARY 27.—**Folkestone.**—BAND PAVILION.—Erection and completion of a band pavilion in Marine Gardens, Folkestone, for the Corporation of Folkestone. Mr. A. E. Nichols, Borough Engineer, Corporation Offices, Folkestone. Deposit £4 4s.

JANUARY 27.—**Guildford.**—HOUSES.—Erection of three pairs of non-parlour houses on the Burnt Common site, in the parish of Send and Ripley, for the Guildford R.D.C. Mr. John Anstee, Council's Architect, Council Offices, Commercial-road, Guildford. Deposit £2 2s.

JANUARY 27.—**Pwllheli.**—HOUSES.—Erection and completion of 12 houses (subsidy parlour type) on the Abererch-road site, for the Borough Council of Pwllheli. The Borough Surveyor, Town Hall, Pwllheli.

JANUARY 27.—**Seaham Harbour.**—ADDITIONS.—For additions to the Upper Standard Council school, for the Durham C.C. Mr. A. J. Dawson, Director of Education. Shire Hall, Durham.

✱JANUARY 27.—**Willesden.**—BATHS, &C.—For the erection of baths and washhouses at Disraeli-road, Lower-place, for the District Council. Mr. F. Wilkinson, M.Inst.C.E., Engineer to the Council, Town Hall, Dyne-road, Kilburn. N.W.6.

✱JANUARY 27.—**Willesden.**—CHALETS.—For the erection of refreshments chalets at Gladstone Park and King Edward VII Recreation Ground. Mr. F. Wilkinson, M.Inst.C.E., Engineer to the Council, Town Hall, Dyne-road, Kilburn, N.W.6.

JANUARY 28.—**Ewood Bridge.**—STORE.—For erection of a lime mixing house and store, and construction of two sludge tanks with pipe connections, and other works, at the Sewage Works, for the Haslingden, Rawtenstall and Bacup Outfall Sewerage Board. Mr. J. R. Bugler, Clerk to the Board. Deposit £5.

JANUARY 28.—**Llangranog (Cards).**—RENOVATIONS.—Renovating the Capel Wig Congregational building, near Llangranog. Messrs. Davies & Sons, architects, Henllau (Cards.).

✱JANUARY 28.—**London, S.W.17.**—FIRE EXITS.—Additional fire exits to ward blocks at the Fountain Temporary Mental Hospital, Tooting-grove, Tooting Graveney, S.W.17., for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Deposit £1.

JANUARY 29.—**Grays.**—REDECORATING.—For certain painting and redecorating work at the children's homes, Stifford, Grays, for the Limehouse B.G. Mr. A. J. Smith, Clerk, Guardians' Offices, Barnes-street, Commercial-road East, E.14. Deposit £2 2s.

JANUARY 30.—**Ireland.**—REBUILDING.—For rebuilding of Loo Bridge Station offices and station master's house in concrete blocks, with a slated roof, for the Great Southern Railway. Mr. C. E. Riley, Secretary, Kingsbridge. Deposit £1 1s.

✱JANUARY 30.—**London, N.6.**—PUBLIC CONVENIENCES.—Erection of three public conveniences at Priory-road, Hornsey, The Broadway, Crouch End, and the Broadway, Muswell Hill, for the Borough of Hornsey. Mr. E. J. Lovegrove, Borough Engineer, and Surveyor, Town Hall, Highgate, N.6.

JANUARY 30.—**Reading.**—HOUSES.—Erection of 20 houses in Norcot-road, Tilehurst, for the County Borough of Reading. Housing Architect, Old College Buildings, St. Laurence's-churchyard, Reading.

JANUARY 31.—**Ipswich.**—REPAIRS.—For repairs to school buildings, for the E.C. Mr. H. Armitage, Secretary for Education, Tower House.

✱FEBRRARY 2.—**Enfield, Middlesex.**—HOUSES.—Erection of 40 houses, upon four sites, for the Enfield Urban District Council. Council's Surveyor, Public Offices, Enfield, Middlesex. Deposit £2 2s.

✱FEBRUARY 2.—**Watford.**—HOUSES.—Erection of 16 houses at Leggatt's Way, Harebreaks, Watford, for the Corporation of Watford. Mr. D. Waterhouse, Borough Engineer, Municipal Offices, 14, High-street, Watford. Deposit £2 2s.

✱FEBRUARY 3.—**Cheshunt.**—HOUSES.—Erection of 60 houses on the Paul's Nursery site, Waltham Cross, for the Cheshunt U.D.C. Mr. J. E. Sharpe, Engineer and Surveyor to the Council, Manor House, Cheshunt. Deposit £5 5s.

✱FEBRUARY 3.—**London, W.**—TELEPHONE EXCHANGE.—Erection of "Langham" Telephone Exchange, Nottingham-street, Marylebone, W., for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Cheques payable to the Commissioners of H.M. Works, &c.

✱FEBRUARY 4.—**Oswaldtwistle.**—HOUSES.—For the erection of 16 houses on the Thwaites-road site, for the U.D.C. Mr. R. N. Hunter, Consulting Engineer to the Council, 22, Rhyddings-street, Oswaldtwistle. Deposit £2 2s.

✱FEBRUARY 4.—**Romford, Essex.**—HOSPITAL EXTENSIONS.—Extension of the administration block and the erection of a cubicle block at their Isolation Hospital, Rush Green, Romford, for the Romford Joint Hospital Board. Mr. R. Banks-Martin, 121, Plashet-grove, East Ham. Deposit £3 3s.

FEBRUARY 6.—**Oldbury.**—SCHOOL.—For erection of a secondary school for 416 pupils, for the Worcestershire C.C. Mr. A. W. Priestley, Director of Education, County Education Office, 37, Foregate-street, Worcester

✱FEBRUARY 7.—**Wallington, Surrey.**—HOUSES.—Erection and completion of the second instalment of 2 houses, brick built, on the Miller's Orchard, Beddington Corner, for the Beddington and Wallington Urban District Council Housing Scheme No. 2. Mr. S. F. R. Carter, A.M.Inst.C.E., Engineer and Surveyor to the Council, Council Offices, Wallington. Deposit £2 2s.

✱FEBRUARY 10.—**Folkestone.**—BAND PAVILION.—Erection and completion of a band pavilion on the Leas Cliff (adjoining the Leas Concert Hall), Folkestone, for the Corporation of Folkestone. Mr. J. L. S. Dahl, Architect, Radnor Chambers, Folkestone, or at the office of the Quantity Surveyors, Messrs. Gardiner & Theobald, 96, Gower-street, London, W.C.1. Deposit £2 2s.

FEBRUARY 11.—**Hunslet**—HOUSES.—For erection of 49 houses at Woodlesford, for the R.D.C. Mr. W. P. Peters, architect, 89, Albion-street, Leeds.

✱FEBRUARY 11.—**London, S.E.16.**—SWIMMING BATHS AND CONCRETE WORK.—New baths and washhouses (Contract No. 2).—Erection of that part of the Baths Scheme, comprising the swimming baths, slipper baths and Turkish, &c., baths, and a considerable amount of reinforced concrete work, in Grange-road, Bermondsey, for the Bermondsey B.C.

NO DATE.—**Burley-in-Wharfedale.**—COTTAGES.—For various trades in the erection of 20 cottages, for the Burley U.D.C. Messrs. A. Marshall & Son, architects, Otley.

NO DATE.—**Darvel.**—TRADES.—For following work in connection with the erection of houses under the housing scheme: Brickwork, carpenter and joiner work, plumber work, plaster and cement work, slater work, painter work, for the T.C. Mr. W. F. Valentine, architect, 5, John Dickie-street, Kilmarnock.

NO DATE.—**Swallownest.**—ADDITIONS.—For erection of a diphtheria block and additions to the administration block at the South Rotherham and Kiveton Park District Isolation Hospital, for the Committee. Mr. A. H. Styring, Clerk to the Committee, 6, North Church-street, Sheffield. Deposit £2 2s.

FURNITURE, MATERIALS, etc.

JANUARY 19.—**London.**—MATERIALS.—For supply of cement, lime, granite and other various materials, for the Chiswick U.D.C. Mr. E. Willis, Engineer and Surveyor, Town Hall, W.4.

JANUARY 20.—**Baildon.**—WATER MAINS.—For supply of 150 tons of 8 in., 7 in., 6 in., 5 in., and 4 in. spigot and socket cast-iron water main, for the U.D.C. Mr. R. Howard Moore, Clerk. Deposit £2 2s.

JANUARY 20.—**Oxford.**—KERB.—For supply and delivery of approximately 45,000 yds. of 9 in. by 6 in. concrete kerb, for the C.C. Mr. A. E. Cockerton, County Surveyor.

JANUARY 21. — **Chelsea, S.W.3.** — SUPPLY OF VARIOUS ARTICLES AND WORKS.—For supply and execution of various articles and works, the contract period being from April 1 next to March 31, 1926, unless otherwise stated, for the Metropolitan Borough of Chelsea. Town Hall, King's-road, Chelsea, S.W.3.

JANUARY 21.—**New Forest.**—GRANITE.—For the supply of 2½ in. granite and limestone, for the R.D.C. Mr. F. Heather, Surveyor, Surveyor's Office, "Selcouth," Pemberton-road, Lyndhurst.

JANUARY 21.—**Winchester.**—CEMENT.—For supply and delivery of British made cement, for the Hampshire C.C. Mr. W. J. Taylor, County Surveyor, The Castle.

JANUARY 24. — **Chelmsford.** — MATERIALS. — For supply of stoneware pipes, broken granite, &c., for the Essex C.C. Mr. Wm. H. Morgan, Chartered Civil Engineer, County Surveyor, Old Court.

JANUARY 24.—**Exeter.**—MATERIALS.—For supply of granite, basalt, limestone. Mr. F. E. Simpson, County Surveyor, 21, Southernhay West, Exeter.

JANUARY 24.—**London.**—MATERIALS.—For supply of granite, lime, cement, wood paving blocks and iron and steel, &c., for the Paddington B.C. Mr. W. F. Abbiss, Town Clerk, Town Hall.

JANUARY 26.—**Lincoln.**—STONE.—For supply of broken stone and slag, refined tar, for the Lindsey (Lincs) C.C. Mr. A. G. Bradshaw, F.S.I., County Surveyor, Newland House.

JANUARY 26.—**Uckfield.**—MATERIALS.—For supply of 500 tons of granite, 7,450 tons of Mendip or Kentish ragstone, and 250 tons of gravel, for the R.D.C. Mr. J. G. Cruttenden, Clerk, 3, Church street.

JANUARY 26.—**Wakefield.**—MATERIALS.—For supply of granite and whinstone, sand and gravel, stoneware pipes, cast-iron gulley grates and frames, for the West Riding C.C. Clerk of the County Council, County Hall.

JANUARY 27.—**Willesden.**—MATERIALS.—For supply of artificial slab paving, gravel, flints, broken granite and slag, lime, cement, and stoneware pipes, &c. Mr. E. A. Pratt, Clerk to the Council, Town Hall, Dyne-road, Kilburn, N.W.6.

JANUARY 31.—**Beverley.**—LIMESTONE.—For supply of whinstone chippings, limestone, and kerb and channelling, for the East Riding of Yorkshire C.C. Mr. J. Bickersteth, Clerk of the Council, County Hall.

JANUARY 31. — **Canterbury.** — MATERIALS. — For supply of broken Guernsey granite, kerb and channel granite, stoneware pipes, bends, junctions and street gullies, Portland cement, timber, bricks, shingle and sand, for the T.C. Mr. P. H. Warwick, City Surveyor and Engineer, City Surveyor's Department, Municipal Buildings.

FEBRUARY 3.—**Hatfield.**—MATERIALS.—For supply of granite, slag, &c., for the Hertfordshire C.C. Mr. A. E. Prescott, County Surveyor, County Surveyor's Office.

✱FEBRUARY 4.—**London, S.W.11.**—SUPPLY OF STORES, &C.—For three, six, and twelve months' supply of various paints, enamels, varnishes, bricks, and cement, horse hire, &c., for the Battersea Borough Council. Town Hall, Lavender Hill, S.W.11.

FEBRUARY 11.—**London.**—GRANITE.—For supply of about 700 tons of 2 in. machine-broken Clee Hill granite and ½ in. granite chippings, 3,000 tons of clean granite chippings for tar-painting work, for the Middlesex C.C. Mr. A. Dryland, County Engineer, County Engineer's Department, Middlesex Guildhall, Westminster, S.W.1.

FEBRUARY 12.—**Leeds.**—GRANITE.—For supply of 1,500 tons of ½ in. whinstone or granite chippings and 500 tons of ¼ in. whinstone or granite chippings, for the T.C. Mr. J. B. Hamilton, Commercial Manager, Highways and Permanent Way Department, 1, Swinegate.

JUNE 3.—**South Africa.**—PIPES.—For supply and delivery of approximately 33 miles 33 in. diameter steel pipes and specials cement lined, for the Cape Town T.C. Mr. J. R. Finch, Town Clerk, City Hall. Deposit £5 5s.

ENGINEERING, IRON AND STEEL.

JANUARY 19.—**London.**—STEELWORK.—For supply of steelwork for the renewal of Bassington-road and Holderness Drain Bridges, for the L.N.E.Rly. Messrs. James McLaren, G. F. Thurston, Joint Secretaries, Secretary's Office, Marylebone Station, N.W.1.

JANUARY 23.—**Gravesend.**—STEEL.—For supplying the necessary steel and iron work for a steel-frame building, for the C.B. Mr. H. H. Brown, Town Clerk.

JANUARY 24.—**Blackpool.**—BRIDGES.—For three steel trough bridges to carry water pipes, for the Fylde Water Board. Mr. Geo. F. Atkinson, Engineer, Head Office, Sefton-street.

FEBRUARY 25.—**Madras.**—SLUICES.—For supply and delivery of 24 in. and 27 in. diameter cast-iron wall sluices, with pillars and headstocks, fitted with gun-metal faces, adjustable wedge blocks and bolts, &c., for each wall sluice complete, for the Corporation. Messrs. J. Mansergh & Sons, Agents to the Corporation of Madras, India, 5, Victoria-street, S.W.1.

MAY 15.—**Siam.**—STEEL.—For supply of superstructure of steel railway bridges, for the Royal State Railways. Commissioner-General, Bangkok.

ROAD, SANITARY, AND WATER WORKS.

JANUARY 17.—**Bootle.**—STREET WORK.—For private street works at the back street between Hemans-street and Shakespeare-street; back passage at rear of Nos. 109 to 115, Knowsley-road, for the C.B. Mr. J. Spencer Tumilty, Town Clerk, Town Hall.

JANUARY 17.—**Chesterfield.**—MAINS.—For laying and jointing of 810 yds. of 6 in. main, in the parishes of Staveley and Sutton cum Duckmanton, 937 yds. of 5 in. main, in the parish of Sutton cum Duckmanton, 2,368 yds. of 4 in. main in the parish of Sutton cum Duckmanton, for the R.D.C. Mr. R. F. Hartwright, Clerk to the Council, Union Offices. Deposit £1 1s.

JANUARY 17.—**Inverness.**—ROAD.—For construction of a section of the Inverness-Perth road, for the C.C. Mr. J. W. McKillop, County Clerk, The Castle, Inverness. Deposit £3 3s.

JANUARY 17.—**Sedgley.**—SEWERS.—For laying and jointing of about three miles of 12 in., 9 in., and 6 in. glazed stoneware and cast-iron pipe sewers, together with manholes, storm overflow, and other incidental works, for the U.D.C. Mr. T. R. Knight, Clerk of the Council, Council House. Deposit £5 5s.

JANUARY 17.—**Wortley.**—ROAD IMPROVEMENT.—For improvement of the Wakefield and Sheffield main road at Chapeltown, for the West Riding C.C. Clerk of the County Council, County Hall, Wakefield. Deposit £1.

JANUARY 19.—**Enfield.**—SEWER.—For laying about 400 yards of stoneware pipe surface water sewer in Hadley-road, from near Oak-avenue to the Ridgeway, together with manholes, street gullies and other appurtenant works, for the U.D.C. Mr. T. W. Scott, Clerk, Public Offices. Deposit £2 2s.

JANUARY 19.—**Hertford.**—MAINS.—For supply of 360 lineal yards of 6 in. and 4 in. cast-iron water mains in Stanstead-road, for the Corporation. Mr. A. Baker, Town Clerk, The Castle. Deposit £2 2s.

JANUARY 19.—**Kingston-upon-Thames.**—ROADS AND SEWERS.—Construction on the housing site of roads and sewers, for the Corporation of Kingston-upon-Thames. Borough Surveyor, Municipal Offices, Kingston-upon-Thames. Deposit £1 1s.

JANUARY 19.—**Penrith.**—MAINS.—For driving of a tunnel approximately 420 yards long in rock, the laying of 8 in. water mains, and the construction of a break pressure tank at Hause Crag, near Patterdale, in the parishes of Patterdale and Martindale, for the U.D.C. Mr. G. Wainwright, Clerk to the Council, Town Hall. Deposit £1 1s.

JANUARY 19.—**Salford.**—VARIOUS.—For reinforced concrete work, asphalting, &c., at the Old People's Home, Stott-lane, Pendleton. Mr. E. M. Inchley, Clerk to the Guardians, Poor Law Offices, Eccles New-road.

JANUARY 20.—**Dunfermline.**—SEWER.—For construction of nearly two miles of the main outfall sewer, for the T.C. Mr. Andrew Shearer, Town Clerk, City Chambers. Deposit £3 3s.

JANUARY 20.—**Epsom.**—STREET.—For making-up of a portion of Portland-place. Mr. E. G. Wilson, Clerk to the Council, Duncannon, 37, Church-street.

JANUARY 20.—**Fareham.**—SEWERS.—For construction and maintenance of about 2,900 yards lineal of stoneware pipe sewers from 6 in. to 12 in. diameter, with manholes and ventilators; the construction of concrete storage and sedimentation tanks, with percolating filters, humus pits, engine house, and other works incidental thereto, at Titchfield, for the R.D.C. Mr. H. A. Watts, Clerk to the Council, 97, West-street.

JANUARY 20.—**Rowley Regis.**—PAVING.—For paving footpaths, laying limestone crossings, new kerbing and channelling, and for relaying kerbing and channelling in certain streets and roads, for the U.D.C. Mr. D. Wright, Clerk to the Council.

JANUARY 20.—**Tottenham.**—GARDEN.—For the construction of a sunken ornamental garden in Seven Sisters-road, between Manchester and Heysham-roads, for the D.C. Mr. R. C. Graves, Clerk and Solicitor of the Council, Town Hall.

JANUARY 21.—**Bournemouth.**—ROAD.—For making up Rutland-road, for the C.B. Mr. H. Ashling, Town Clerk, Town Hall. Deposit £1 1s.

JANUARY 21.—**Clayton-le-Moors.**—SEWER.—For laying of 870 lineal yards of 12 to 15 in. earthenware pipe sewer, between Hyndburn Bridge and Sparth-road, in Whalley-road, for the U.D.C. Mr. A. Dodgeon, Surveyor to the Council, Council Offices.

JANUARY 21.—**Fleet.**—PIPES.—For construction of several miles of cast-iron and stoneware sewers, brick, concrete and cast-iron manholes, flushing tanks, ventilating shafts and columns, cast-iron rising main, air mains and additions to the sewage disposal works, and other incidental work, for the U.D.C. Mr. E. Nash, Solicitor and Clerk to the Council, Council Offices, Fleet (Hants). Deposit £10.

JANUARY 21.—**Port Talbot.**—ROAD.—For carrying out of road improvement scheme between Pwllyglaw, Cwmavon, and Pontrhydyfen, for the C.B. Mr. M. Thomas, Town Clerk, Aberavon.

JANUARY 22.—**Camborne.**—SEWERS.—For providing and laying about nine miles of stoneware sewers and the construction of manholes and other work in connection therewith, and driving of a tunnel, about 1,000 yards in length, and providing and laying a 24 in. by 16 in. egg-shaped sewer; and providing and laying about 175 yards of 18 in. cast-iron outfall sewer, for the U.D.C. Mr. D. W. Thomas, Clerk to the Council. Deposit £3 3s.

JANUARY 22.—**London, S.W.2.**—WORKS AND MATERIALS.—Works required to be done and materials supplied and used in the formation and laying-out of sewers and builder's roads on the remainder of the Bloomfield Housing Estate, Central Hill, Upper Norwood, for the Lambeth Borough Council. Mr. Osmond Cattlin, A.M.Inst.C.E. (Chartered Civil Engineer), Borough Engineer, Town Hall, Brixton-hill, S.W.2. Deposit £2 2s.

JANUARY 22.—**Warblington.**—STREET WORKS.—For making-up, kerbing, paving, channelling, &c., of Woodlands-avenue, Emsworth, for the U.D.C. Mr. F. Heath, Engineer and Surveyor to the Council, Council Offices, North-street, Emsworth. Deposit £2 2s.

✱JANUARY 23.—**Winchester.**—SEWERS AND SANITARY WORK.—Construction and maintenance of about 7½ miles of stoneware and iron pipe sewers from 6 in. to 12 in. diameter, with manholes and ventilators, and construction of concrete equalising and sedimentation tanks, with percolating filters, humus pits, engine house and other works incidental thereto, at Chandler's Ford, Hants, for the Hursley R.D.C. Messrs. Weston, Burnett and Thorne, Civil Engineers, 24, Portland-street, Southampton. Deposit £3 3s.

JANUARY 24.—**Ilford.**—PAVING.—For levelling, paving, metalling, channelling and making good (*a*) Hickling-road and (*b*) Clarence-avenue, for the U.D.C. Mr. Adam Partington, Clerk of the Council, Town Hall. Deposit £2 2s.

JANUARY 24.—**Manchester.**—SEWERS.—For sewering, draining, flagging, paving, &c., Pine-road, Didsbury, from Parkfield-road to Elm-road; draining, flagging, paving, &c., Lindsay-avenue, Rusholme, from Slade-lane, and draining, flagging, &c., Allandale-road, Rusholme, from Collingwood-road to Lindsay-avenue, from Lindsay-avenue to Lytham-road, and from Lytham-road to Kingsway, for the T.C. Mr. P. M. Heath, Town Clerk, Town Hall. Deposit £1 1s.

JANUARY 26.—**Aberdeen.**—TANK.—For laying-out of an irrigation field and the construction of a small concrete tank at Dinnet Station, L.N.E.R., for the Corporation Waterworks. Mr. G. Mitchell, Water Engineer's Office. Deposit £2 2s.

JANUARY 26.—**Axminster.**—IMPROVEMENT.—For improvement of the existing road between Tanyard Cross and Axmouth Bridge, for the R.D.C. Mr. Cecil Forward, Clerk. Deposit £3 3s.

JANUARY 27.—**Amman Valley.**—SEWERS.—For construction of about 8 miles of stoneware and concrete pipe sewers, together with manholes (and certain lengths of cast iron pipes for river and railway crossings), in the Amman Valley, together with outfall works, for the Joint Sewerage Board. Mr. T. M. Evans, M.A., Solicitor, Clerk to the Joint Board, Ammanford, Carmarthenshire. Deposit £5 5s.

JANUARY 27.—**Southall-Norwood.**—ROAD.—For construction of a new road between King-street and Western-road, for the U.D.C. Mr. J. B. Thomson, Engineer and Surveyor, Town Hall.

JANUARY 28.—**Birmingham.**—TRAMWAYS.—For construction of tramways, Alum Rock-road and Bordesley Green (from the present tramway terminus in Alum Rock-road to Sladefield-road, and from the present tramway terminus in Bordesley Green, along Bordesley Green and the New-street across Batchelor's Farm), for the T.C. Mr. H. H. Humphries, M.Inst.C.E., City Engineer and Surveyor, The Council House.

✱JANUARY 28.—**London, S.W.17.**—PAVING.—For providing and laying terrazzo paving to male pavilions at Tooting Bec Hospital extensions, Church-lane, for the Metropolitan Asylums Board. The Office of the Board, Victoria Embankment, E.C 4. Deposit £1.

JANUARY 29.—**Watford.**—ROADS.—For construction of 700 yards lin. of new roads, 1,500 yards lin. of new sewers and 750 yards lin. of existing roads on housing estate, at Wiggenhall, for the C.B. Mr. W. Hudson, Town Clerk, Municipal Offices, 14, High-street. Deposit £2 2s.

JANUARY 31.—**Carmarthenshire.**—ROADS.—For removing shale rock and building banks, &c., at Bargoed-bridge, Henllan, removing shale rock and building retaining walls, &c., at the Old Toll House, near Llandyssul, erecting masonry retaining wall, &c., at Dolgwm, near Cwmduad, erecting masonry retaining wall, removing shale rock, &c., at Dolwen Mill, near Cwmduad, removing shale rock, widening masonry bridge, &c., at White Mill, Abergwili, and removing shale rock, building retaining wall, &c., at Dolgwm Mill, Pencarreg, near Lampeter, for the C.C. Mr. R. W. Jones, County Surveyor, County Offices, Carmarthen. Deposit £2 2s.

JANUARY 31.—**Clayton-le-Moors.**—SEWER.—For laying of 870 lineal yards of 12 to 15 in. earthenware pipe sewer, between Hyndburn Bridge and Sparth-road, in Whalley-road, for the U.D.C. Mr. A. Dodgeon, Surveyor to the Council, Council Offices.

JANUARY 31.—**Feckenham.**—SEWERS.—For the provision, laying and jointing of 240 lineal yards of 18 in. and 15 in. diameter stoneware and cast-iron pipe sewers, and construction of manholes, detritus tanks, sedimentation and storm tanks, bacterial filters, humus tanks and sludge beds, for the R.D.C. Mr. E. Dyer, Clerk to the Council, Council Offices, Astwood Bank, near Redditch. Deposit £5 5s.

JANUARY 31.—**Ince-in-Makerfield.**—MAKING-UP.—For making-up of certain streets within the district, including sewering, levelling, metalling, kerbing, channelling, flagging, and all other works in connection therewith, for the U.D.C. Mr. A. F. Howgate, Clerk, Council Offices, Ince, near Wigan. Deposit £2 2s.

JANUARY 31.—**Mull.**—ROAD.—For construction of 1,400 yds. of roadway in the Island of Tiree, for the D.C. Mr. D. M. Mackinnon, Mull District Clerk, County Buildings, Oban.

JANUARY 31.—**Nuneaton.**—WIDENING.—For widening, straightening and improving Ansley-road. Mr. R. C. Moon, Borough Surveyor and Engineer, Municipal Offices. Deposit £2 2s.

✱FEBRUARY 2.—**Westminster Bridge.**—REPAVING.—For the repaving with wood blocks and subsequent maintenance of the carriageway of Westminster Bridge, for the L.C.C. The Chief Engineer, Old County Hall, Spring-gardens, S.W.1. Deposit £3.

FEBRUARY 3.—**St. Albans.**—DRAINAGE.—For main drainage of London Colney, consisting of sewers, manholes, outfall works, ejector chambers, engine house, &c., for the R.D.C. Mr. E. F. W. Hieatt, Clerk, Union Offices. Deposit £3 3s.

FEBRUARY 7.—**St. Mellons.**—ROADS.—For construction of (1) about 780 lin. yards of 16 in. diameter cast iron pipe sewer laid partly in tunnel; (2) about 500 lin. yards of 13 in. diameter cast iron pipe sewer, laid as No. 1; (3) about 860 lin. yards of 12 in. diameter stoneware pipe sewer; (4) about 760 lin. yards of 9 in. diameter stoneware pipe sewer; (5) about 480 lin. yards of 6 in. diameter stoneware pipe sewer; (6) construction of accommodation road, including the provision of about 4,000 cubic yards of filling; and (7) manholes, ventilating shafts and other appurtenant works, for the R.D.C. Messrs. Thomas & Morgan & Partners, Civil Engineers, Pontypridd. Deposit £10 10s.

FEBRUARY 9.—**Birmingham.**—RESERVOIR.—For construction of the Bartley reservoir, on a site adjoining the existing reservoir at Frankley, for the T.C. Mr. J. H. Broadley, Secretary, Water Department, Council House, Edmund-street. Deposit £10.

FEBRUARY 9.—**Caerphilly.**—STREET WORKS.—For paving, kerbing, sewering, forming and metalling, &c., of five streets or approach roads, three streets at Abertridwr, and two streets at Nelson. Mr. T. H. Richards, surveyor, Council Offices. Deposit £2 2s.

NO DATE.—**Wellington.**—FENCING.—For about 2,000 lin. yards of light wrought iron fencing or concrete posts and strand wire fencing, for the R.D.C. Mr. R. Blakeway Phillips, Surveyor, Edgbaston House.

Competitions.

(*See Competition News, page* 100.)

Auction Sales, Tenders, etc.

✱JANUARY 17.—**Great Bookham, Surrey.**—Mr. C. E. Clark will sell, without reserve, at Eastwick Buildings, Lower-road, Great Bookham, Surrey, prime new timbers and builders' effects. Auctioneer, Beddington House, near Croydon; also Lower-road, Bookham.

✱JANUARY 19.—**London, S.E.15.**—Mr. C. E. Clark will sell, without reserve, at Rollins Wharf, Canterbury-road, Peckham, S.E.15 (on the Surrey Canal and under Canterbury Bridge), timbers, flooring, matching, scaffolding, laths, &c. Auctioneers, Beddington House, near Croydon.

JANUARY 20.—**Middlesex.**—Mr. F. H. Clark will sell, at the National Filling Factory, Hayes, Middlesex, a freehold factory, with immediate possession, situated in the rapidly developing district of Hayes; also hutting, timber and building materials (new and second-hand), 10 tons of galvanised corrugated iron sheets. Auctioneers, Railway Wharf, York-road, Wandsworth, S.W.18.

JANUARY 21.—**London, E.C.3.**—Messrs. Fuller, Horsey, Sons, & Cassell will sell, *re* Canal Transport, Ltd., Iver, Bucks, by order of Mr. George Lord, F.C.A., Receiver for the Debenture holders, at the Merchants' Hall, Baltic Exchange, St. Mary Axe, E.C.3, precisely as a first lot, the leasehold sand and gravel pits at Iver; also sale in lots in detail of the plant and machinery, including 24 canal barges. Auctioneers, 11, Billiter-square, E.C.3.

JANUARY 21.—**London, S.W.**—Messrs. Veryard & Yates will sell, without reserve, at Brixton-hill, S.W. (rear of Calder's-row, opposite New Park-road), useful timber and building materials. Auctioneers, 365, Norwood-road, S.E. 27.

JANUARY 27.—**London, W.12.**—Mr. F. H. Clark will sell, without reserve, at C.S.D., 401, Wood-lane, Wormwood Scrubbs, W. 12, near Wood-lane Station, Central London Railway, final sale of timber, corrugated iron, and building materials. Auctioneers, Railway Wharf, York-road, Wandsworth, S.W. 18.

JANUARY 27 AND FOUR FOLLOWING DAYS.—**Blackmore Park.**—Messrs. Ingram & Mills will sell the mansion at Blackmore Park for demolition purposes (unless previously disposed of privately). Auctioneers, 47, Foregate-street, Worcester.

APRIL 2.—**London, W. 1.**—Messrs. Knight, Frank & Rutley will sell, in Hanover Estate Room (unless previously sold privately), long leasehold residential property, Brondesbury House, 221, Willesden-lane, N.W. Grounds about 4 acres, forming eligible building site. Lease about 977 years. Ground rent, £106 per annum. Vacant possession. Auctioneers 20, Hanover-square, London, W. 1.

Public Appointments.

JANUARY 19.—**Kettering.**—WORKS MANAGER.—Works manager to act also as foreman in the building of houses, for the Kettering U.D.C., by means of direct labour. Mr. John Bond, Clerk to the Council. Council Offices, Kettering.

JANUARY 19.—**Leeds.**—ASSISTANT CLERK OF WORKS.—Assistant Clerk of Works wanted. Must be good draughtsman and have practical experience in the erection and upkeep of large buildings. The Registrar, The University, Leeds.

✱JANUARY 23.—**Gloucester.**—Temporary Architectural Assistant required in the office of the Architect to the Education Committee, by the Gloucestershire C.C. Mr. R. S. Phillips, Architect to the E.C., Shire Hall, Gloucester.

JANUARY 24.—**London, S.W.7.**—Foreman of Works required by the Board of Education for the Science Museum. The Director, Science Museum, South Kensington, London, S.W.7.

JANUARY 26.—**London.**—HYDRANT INSPECTOR.—Appointment as hydrant inspector in the department of the Chief Officer of the Fire Brigade required by the London County Council. Clerk to the Council, County Hall, Westminster Bridge, S.E.1.

✱JANUARY 27.—**Romford.**—Temporary appointment of Building Inspector in the Surveyor's Department required by the Romford R.D.C. Mr. T. W. A. Greenhalgh, Clerk to the Council, 16A, South-street, Romford.

✱JANUARY 30.—**Liverpool.**—Chief Assistant required in the Housing Department for whole-time appointment by the Council of the City of Liverpool. The Town Clerk (Housing and Improvement Department), Municipal Buildings, Liverpool, endorsed "Chief Assistant, Housing Department."

✱FEBRUARY 4.—**London, N.1.**—Clerk of Works required by Metropolitan Borough Council of Islington in connection with the Laycock-street housing scheme. Council's Architect, Mr. E. C. P. Monson, F.R.I.B.A., F.S.I., &c., Finsbury-pavement House, 120, Moorgate, E.C.2.

A Concrete Factory Building.

Some further interesting particulars have now come to hand regarding the roof construction of the concrete factory building at Baldock, illustrated in our last issue, of which Mr. T. H. F. Burditt is the architect. The entire roof, with an area of 45,000 sq. ft., is formed of beam spans, from 15 ft. to 32 ft. in length. About 75 per cent. of these beams are aqueducts, that is, with a channel cast in the top to carry rain water to the down pipes along the centre wall of the building. Resting upon these beams, the roof proper is built in panels of hollow 4½ in. and 6 in. tile, with expansion joints every 20 ft., with kerbs and lead flashings. The pitch of the roof is ¼ in. to 1 ft., and is formed of a 1 : 2 : 4 mixture of Portland cement, sand, and broken rock. On this is overlaid 3 in. wire mesh, forming a key for a final screeding of 2 in. of 1 : 3 Super Cement and sand. This type of roof is very unusual in this country, and it is of interest to note that the top screeding of Super Cement has, the architect informs us, made the roof absolutely water-tight.

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; and B.E. for Board of Education.

ABERDEEN.—The T.C. passed plans: Bungalow, Westburn-drive, for Messrs. Williamson & Bell, architects; bungalow, Royfold-crescent, for Mr. J. Strachan, junr., per Mr. William E. Gauld, architect; two houses, Deemount-avenue, for Messrs. D. & J. R. M'Millan, architects; bungalow, Westburn-drive, for Miss Isabella M. Duff, per Williamson & Bell, architects; two bungalows, Gray-street, for W. J. Anderson and C. P. Trenerry, per Tawse & Allan, architects.

AUDENSHAW.—The U.D.C. is negotiating with the L.N.E.R. regarding the proposed widening of the canal bridge.—The Council is discussing with the Ashton-under-Lyne Co-operative Society the possibility of the Society undertaking the erection of houses.

BARNSLEY.—The Governors of the Grammar School are to erect permanent extensions on the present site in Shaw-lane to increase the accommodation by 300 places.

BARNSTAPLE.—The R.D.C. has received the M.H. approval for 30 houses.

BASINGSTOKE.—The T.C. has passed plans for four houses in May-place, for Mr. H. Cater.

BECONTREE.—An elementary school is to be built by the Essex C.C.

BENTLEY.—The Surveyor to the U.D.C. has been instructed to prepare lay-out plan of the Bentley Farm Estate, upon which it is proposed to carry out a new housing scheme.

BINGLEY.—Plans passed: Semi-detached bungalow, Bradford-road, for Mr. T. Turner; store, Myrtle-park, Bingley, for Messrs. Dracup & Foulds.

BIRKENHEAD.—The B.E. has approved plans for the erection of additional accommodation at the St. Hugh's Central School.—The architect has been instructed to prepare plans for a new secondary school for girls.—Subsidy houses are to be erected at the Hursts (46) by Messrs. Mills & Milnes, and at Bidston-avenue (33) by the Hamilton Estates, Ltd.—A garage is to be erected at the infectious diseases hospital at a cost of £1,649.—Refreshment rooms and conveniences are to be erected at Birkenhead Park, at a cost of £1,580.

BLACKPOOL.—The T.C. passed plans: House, Hesketh-avenue, E. Grimshaw; 12 houses, Belgrave-road, Beardshaw & Boardman; two houses, Cleator-avenue, J. Hodgson; six houses, Layton-avenue, T. P. Worthington; two houses, Dunelt-road, Messrs. Martin; two bungalows, Watson's-road, J. Fletcher; bungalow, Boscombe-road, R. Leach; two houses, Lytham-road and Windermere-road, Harrison & Griffiths; two bungalows, Bedford-avenue, J. R. Ashworth; two houses, Wolverton-avenue, T. Bannister; two bungalows, off Squires Gate-lane, J. Smith; house, North Park-road, S. Shepherd; four houses, Osborne-road, Cleveleys, J. Jagger; eight houses, Rectory-road and Ilford-road, Messrs. Beardshaw; house and garage, Kenilworth-gardens, F. Robinson; two houses, Hesketh-place, Knight & Co.; three houses, Nelson-road, R. Singleton; bungalow, Fleetwood-road, R. Jackson; two bungalows, Alexandra-road, Bispham, J. Bee; two houses, Coniston-road, T. & C. Hilton; four bungalows, Fleetwood-road, — Cox; three shops and two houses, off Rectory-road — Edmundson; two houses, Coniston-road, Stott & Howbrook; four houses and shops, Vicarage-lane, — Metcalfe; house, North Park-road, C. M. Philipps; house, North Park-road, W. R. Ward; 10 houses, Rectory-road, W. Watson; six houses, Rectory-road, E. R. Grimshaw; house, Warley-road, R. Saxon; transformer chamber, Police Station-yard, Tramways, &c., Committee.

BLYTH.—The Borough Engineer of the C.B. submitted plan of the proposed widening of the approaches of Bedlington bridge, estimated to cost £1,400, which was approved. The Clerk was authorised to apply for the money.—Recommended: The Town Clerk is to negotiate with the District Valuer for the acquisition of land for the erection of 50 houses.—The C.B. received a letter from Mr. Brewis stating that his Trustees would be prepared to sell land near the South Newsham Waterworks at £240 per acre for the purpose of an Infectious Diseases Hospital.—Plans passed: Eight houses in Salisbury-street, by Mr. J. Cook; bungalow in Plessey-road, by Messrs. Berg & Turnbull.

BOLTON.—The T.C. approved plans: G. Rothwell, bungalow, "Montserratt," Chorley Old-road; W. Gornall & Sons, two houses, Carlton-road; Leigh Bros., Ltd., 90 houses, Moorland-grove district; A. S. Woods, houses, Rowsley-avenue; Bradshaw & Needham, two houses, Bennetts-lane; A. S. Woods, 12 houses, Tenby-avenue; A. S. Woods, four houses, Greenmount-lane; J. Edgar Palton, four bungalows, Bromwich-street; J. C. & F. Woods, two houses, Church-road; J. R. Miller, bungalow, St. Helen's-road.—The E.C. has decided to erect a school in Devonshire-road, at a cost of £14,000.—Subsidies have been voted for houses to be erected as follows: 12 houses, Kirkby-road, for Mr. W. Yates; eight houses, Hughes-street, for Mr. William Draper; two houses, Chorley Old-road, for Mr. J. H. Horrocks; two houses, Ashworth-lane, for Mr. B. Winstanley; two houses, Within's-lane, for Mr C. W. Norris. Plans passed: House, Abbotsford-road, for Messrs. Leigh Bros., Ltd.; two houses, Lever Edge-lane, for Mr. T. Blakley; two houses, Bradford-road, for Mr. Blackley; new streets off Within's-lane, for Mr. T. Gillibrand; three houses and shops, Chorley Old-road, for Messrs. Leigh Bros., Ltd.; 12 houses, Rydal-road, for Messrs. G. Temperley & Son; 43 houses, Singleton-avenue, for Messrs. Gornal & Son; bus station, Salop-street, for Tramways Committee; lay-out plan, off Devonshire-road, for Messrs. Jackson & Sons; eight houses, Devonshire-road, for Mr. J. Uttley; four houses, Church-road, for Mr. N. O. Halliwell.

BOSTON.—The T.C. has accepted tenders for the erection of nine pairs of houses at £1,081 per pair, and two pairs at £1,067 per pair.

BOURNEMOUTH.—The C.B. are discussing the linking up of the promenade at Alum Chine with the West Undercliff Promenade, and the eventual extension of the present Undercliff Promenade, now being constructed east of Boscombe Pier to Fisherman's Walk.—Plans have been passed for the construction of tea gardens and refreshment rooms, at a cost of about £5,000.

BRENTWOOD.—The Essex C.C. has asked the U.D.C. to co-operate in a scheme of regional town-planning.

BRIDLINGTON.—The T.C. approved plans: The Anglo-American Oil Co., Ltd., spirit depot at the L. & N.E. Railway Goods Yard, for the Anglo-American Oil Co., Ltd.; Mr. C. L. Waite, two houses, Priory Estate, for Mr. T. N. Shaw; Mr. J. R. Earnshaw, house, west side of St. James's-road, for Mr. E. Gray; Mr. C. L. Waite, two houses, Priory Estate, for Mr. W. Robinson; Mr. M. B. Parkin, house, Kingsgate (west side), for Mr. W. Dalby; Mr. F. Vaux, house, St. James's-road, (east side), for Mr. G. R. Pudsey.

BRIGHTON.—The Finance Committee of the T.C. has received a report of the Works Committee recommending the provision of an underground lavatory for both sexes at the Seven Dials and applying for sanction of £1,300 to defray the cost.—Plans passed: House, South-avenue, for T. R. Braybon, by Denman & Son; house, Dyke-road, for R. Cook & Sons, Ltd.; house, Dawson-terrace, for C. J. Payne; six houses, Hollingdean-terrace, for A. T. Dockerill, by W. J. Burstow.—The T.C. have recommended to improve the Western Lawns, at a cost of £18,000, for which they are to apply to the M.H. for sanction to loan. A school is proposed to be erected at Moulsecomb, which is to cost something like £12,800. The M.H. has sanctioned to borrowing of £1,750 for the purchase of No. 2, Pavilion Parade.

BURNLEY.—The T.C. passed plans: Two houses, Rose Hill-avenue, submitted by Mr. L. Todd.

BURTON-ON-TRENT.—The B.S. has prepared plans for the extension of the museum and is to obtain tenders for the work as soon as possible.—Plan passed: House, Mill Hill-lane, for Mr. A. E. Cliff.—The T.C. has decided to purchase land at High Bank for additional houses.

CARLISLE.—The T.C. approved plans: H. H. Hodgkinson, for E. Musgrave, four houses and a shop in Boundary-road; H. E. Scarborough, for A. Hoodless, bungalow, Moorhouse-road; Miss M. Clarke, two houses, St. James's-road; J. & R. Bell, two houses, Dalston-road, and four houses, Victoria-road, Botcherby.

CARMARTHEN.—The M.T. has ordered the drafting of three schemes for the construction of a new bridge over the River Towy, provisionally estimated at £25,000 cost, from which final design selection will be made. The Ministry is to pay 75 per cent. of the cost of the new structure.

CASTLEFORD.—Land adjoining the Castleford Pontefract-road school is to be acquired for extensions.

CHESTERFIELD.—The T.C. has asked Messrs. Wagstaff & Sons to prepare plans for 62 houses, and Messrs. Wilcockson & Cutts to prepare plans for 48 houses.—Another site is to be secured for the erection of baths.—A sub-committee is reporting as to the provision of new schools.—Plans passed: House, Storrs-road, for Miss Broomhead; two houses, Whitecotes-lane, for Mr. E. Revill; house, Eyre-street, for Mr. H. Norman; bungalow, Prospect-road, for Mr. E. Rawson; house, Langer-lane, for Mr. Arnold.

CHORLEY.—Mr. Percy Howard, architect, has indicated certain modifications in the plans of the proposed public baths and the Council has asked a committee to inspect the public baths at Stalybridge and Royton before coming to a decision.—The T.C. passed plans: Two houses, Rotherwick-avenue, for Mrs. E. Brindle; house, Carr-lane, for Mr. D. Turner; compressor house, for Chorley Railway Wagon Co., Ltd.; two houses, Rylands-road, for Mr. Hampson; house, Rotherwick-avenue, for Mr. W. Halton.

CORBYN BEACH.—The Borough Surveyor of Torquay has submitted to the T.C. plans for a bathing pool, to cost about £2,000.

COVENTRY.—The T.C. recommend that two experimental concrete houses be erected at Narrow-lane, at an estimated cost of £1,000.

DANYGRAIG.—Messrs. Baldwins (Port Talbot) has passed plans for the erection of sixteen additional mills and 250 workmen's houses.

DARTMOUTH.—The T.C. passed a plan for a house in Yorke-road, for R. C. Roper.

DERBY.—The T.C. has purchased from Mr. J. Sowter the premises known as the malthouse in Derwent-row, containing approximately 552 square yards, at the price of £700, for the new wholesale market.—Plans for a nurses' home in connection with the Mental Hospital are to be prepared for submission to the Council.

DINNINGTON.—A site is to be secured for the erection of a centre for senior mining and technical education by the Miners' Welfare Fund.

DONCASTER.—A three-story building is to be erected on the St. George Gate side of Baxter Gate by Messrs. Woolworth's, Ltd.

DUDLEY.—The T.C. passed plans for a shopping arcade, Market-place and Tower-street, for Mr. T. W. Tanfield.

EASTBOURNE.—The T.C. passed plans: S. D. Foulkes, three pairs semi-detached houses, Woodgate-road; A. J. Bessant, detached house, Le Brun-road; Miss Moore (A. Ford, architect), house, Pashley-road; Wakefield & Avard (A. Ford, architect), pair of semi-detached houses, Victoria-drive; J. T. Wenham (S. G. Scales, architect), three pairs of semi-detached houses, Rotunda-road, St. Anthony's-hill; A. R. M. Sykes (T. Fogg & Sons, architects), house, Pashley-road.

EDMONTON.—The U.D.C. passed plans: Nine houses, Alpha-place and Buckstone-road, by Mr. A. Whitlock; eight houses, Summerhill-grove, by Mr. E. E. Yates; six houses, Queen Anne's-grove, by Messrs. Hills & Grant; two houses, Park-avenue, Bush Hill-park, by Mr. E. Buckle; bungalow, Chichester-road, by Mr. A. Robinson; six houses, Queen Anne's-grove, by Messrs. Harrison & Co.

EPPING.—The U.D.C. has received offers of land for the housing scheme from owners of three acres in Bury-road, and Bury-lane, Bower-road, St. James-street, and Bell-common.

EWELL.—The R.D.C. is to prepare a town-planning scheme for the parishes of Ewell and Cuddington.

FLEETWOOD.—The Council are about to acquire a site (approximately 9¼ acres), adjoining Warrenhurst Park, upon which it is proposed to carry out a housing scheme. Fifty houses are being erected by local railwaymen for their own occupation, at a cost of £675 per house, inclusive of purchase of land.

FOLKESTONE.—The T.C. are inviting tenders for a pavilion on Leas Cliff, at an approximate cost of £60,000.

GLAMORGAN.—The M.T. has approved the acceptance by the Glamorgan C.C. of tenders for the first contract of £25,000 for the construction in connection with the scheme of a new road from Cwmparc to Nantymoel.

GLOSSOP.—The T.C. is to borrow £3,420 in respect of new municipal offices.

GLENDALE.—The R.D.C. passed a plan for a house, for Mr. Redpath.

GUILDFORD.—The T.C. approved plans: Factory, Worplesdon-road, submitted by G. How, for Mason & Toogood; bungalow, Onslow Village, submitted by Knapp, Fisher, Powell & Russell, for Mr. Perry; semi-detached house, Woodbridge-hill, submitted by Mr. Mitchell, for Mr. A. W. Baker; semi-detached house, Woodbridge-hill, submitted by Mr. Mitchell, for Mr. H. E. Woolgar; detached house, New-road, Nightingale-road, for Stanley Ellis; detached house, Stoughton-road, submitted by Mr. Gaff, for Mr. W. H. Lamdin; detached house, Harvey-road, submitted by Hodgson, Lunn & Co., for Mrs. T. S. Terry; detached bungalow, Stocton-road, for Mrs. F. Purser; detached house, Mary-road, submitted by J. Lake, 42, Croft-road, for F. J. Puttock; detached house, London-road, submitted by Tomkins, Somes & Co., for Mr. Ouidott; shop and offices, Onslow-street, submitted by Hodgson, Lunn & Co., for Sutton & Co.; semi-detached house, Stoke-road, submitted by T. Dyer, for J. Hall; semi-detached house, Stoke-road, submitted by T. Dyer, for Mr. Jermyn.

HAMPTON.—In view of the difficulty of adapting the existing bridge at Hampton Court for modern requirements, the Surrey C.C. is likely to agree to the construction of a new bridge east of the present structure, and which will involve the making of a new approach road.

HARTLEPOOL.—Plans passed by the T.C.: Mr. Hopper, two houses in Fisher-row, Brougham-street.

HARWORTH.—Messrs. Barbour, Walker & Co., Ltd., propose to electrify Harworth, and will erect all necessary sub-stations, transformer houses, &c.

HASTINGS.—The T.C. approved plans for a pair of semi-detached bungalows at Red-lane, for Mr. F. Jarrett. Architect is Mr. H. D. Ward.

HEMSWORTH.—The Board of Guardians have approved plans for the erection of a master's house and porter's lodge, at an estimated cost of £1,500.

HESTON AND ISLEWORTH.—The U.D.C. passed plans: Messrs. P. Chase Gardener & Co., house, Hounslow-avenue; The Silwood Construction Co., Ltd., 30 cottages, Grenville-avenue and Roseville-avenue; Mr. G. Cutting, bungalow, Villiers-road; Mr. A. J. Thair, house, The Grove; Mr. T. Chapman, bungalow, Staines-road; P. Chase Gardener & Co., four houses, Rollit-crescent; Mr. W. J. Harris, four houses, Denbigh-road; Mr. B. L. Young, four houses, Church-road, Heston.

HITCHIN.—The R.D.C. approved plans: Two cottages at Little Wymondley; bungalow at Todds Green; pairs of cottages at Newnham and Todds Green; two pairs of cottages at Knebworth; two pairs of cottages at Codicote; village hall at Knebworth, for the Knebworth War Memorial Committee; 11 cottage bungalows, for Mr. W. Picton, at Gun Meadow, Knebworth.

HOVE.—Plans passed by the T.C.: J. Bately, for J. Glascock, pair semi-detached houses, Hallyburton-road; F. Brooksbank, house, Hogarth-road; E. E. Brown & Co., for Sir Francis Lowe, 15 houses, St. Leonard's-avenue; Mr. C. Y. Smith, 10 houses, Saxon-road.

HULL.—The T.C. is to proceed with the construction of a new street from Paragon-road to Spring Bank, at a cost of £282,820.—A site is being secured for the proposed secondary school at East Hull.—The City Architect is to advertise for tenders for the erection of a third pavilion at the Infectious Diseases Hospital.—Road improvement schemes are to be carried out at a cost of £156,000.—Plans passed: Seven houses, Cottingham-road, for Mr. Barnett; two houses, Monmouth-street, for Mr. J. S. Williamson.—Subsidies are to be paid for the erection of the following houses: Two houses, Lorraine-street, for Mr. Tarran; eight houses, Lee-street, for Mr. J. E. Wray; eight houses, West-side, for Mr. J. E. Wray; eight houses, Brindley-street, for Mr. G. Needler; four houses, Southcoates-lane, for Mr. R. Ashton; house, Marfleet-avenue, for Mr. Waller.—The Corporation had before them for con-

* See also our List of Contracts, Competitions, etc.

firmation an estimate of £95,550 for 200 additional houses on the West Hull site.

HUNGERFORD.—The Surveyor of the D.C., reporting on the proposed housing schemes, submitted for consideration three sites for the suggested 20 houses, and the Council agreed that the site, to cost £300, should be upon Mrs. Wren's meadow in Prospect-road.

HUNSWORTH.—The Socialist party propose to erect new club premises at East Bierley.

ILKESTON.—The T.C. passed plans: Two houses, Manor-road, for Briggs & Co.; house, Church-street, for J. W. Stapleton & Sons; two houses, Cotmanhay-road, for J. W. Stapleton & Sons.

ILKLEY.—A site in Bolling-road is to be purchased for the erection of a secondary school for girls.

INVERNESS.—The T.C. has received the approval of the Board of Health for the erection of 56 houses.

IPSWICH.—One of the six beet sugar factories is proposed to be built at Ipswich.

KEIGHLEY.—Plans passed: Bungalow, Oakworth, for Messrs. Waddington Bros.; two bungalows, Oakworth, for Messrs. J. R. Binns & L. Wallbank; three houses, Low Spring-road, for Mrs. Ickringhall; house, Hog Holes-lane, for Mr. A. Nicholson; bungalow, Oakworth-road, for Mr. J. W. Waterworth; three houses, View-road, for Messrs. E. Turner, Ltd.; four houses and two shops, Grafton-road, for Mr. James Wharton.

LANCASTER.—A new building scheme is shortly to be carried out for the Governors of the Grammar School, comprising extra laboratories, assembly hall, art room, and a new school library.

LEEDS.—Tenders are to be invited for the erection of 500 houses at Middleton, Cross Gates, and Meanwoodlay, plans for which have been prepared by the B.S.—A branch library is to be erected at Hunslet, at a cost of £9,000.—The following houses are to be erected under the subsidy scheme: Four houses, Old-lane, for Messrs. Roddy & Sons; three houses, Roman-gardens, for Mr. E. Fish; four houses, York-road, for Messrs. Harrison & Co.; two houses, Talbot-grove, for Mr. W. C. Rogers; house, Silver-grove, for Mr. J. W. Howcroft; three houses, Headingley, for Messrs. John Coates & Sons; bungalow, Roman-avenue, for Mr. E. R. Parker; house, Vancouver-place, for Mrs. Webb.—The T.C. passed plans: J. Hook, bungalow, Armley Ridge-road; T. Hobson, two semi-detached houses, Gordon-terrace, Meanwood; F. Holmes, eight semi-detached houses, Parkside-road, Meanwood; G. L. Gledhill, house, Whitehall-road, New Farnley; F. Sparling, two semi-detached houses, Shadwell-lane, Shadwell; R. Goulden, two semi-detached houses, Grove Hall-drive, Beeston; R. Mason, two semi-detached houses, Ash-road and Canterbury-drive, Headingley; F. Reddyhoff & Son, six semi-detached houses, Wensley-drive, Allerton Hall estate; C. H. Cooper, two semi-detached bungalows, Osmondthorpe-lane, York-road; G. Wilson, 10 semi-detached houses, Coldwell-road, Cross Gates Housing estate; T. Masters, Crowther & Lund, eight semi-detached houses, Ring-road, Shadwell; G. A. Wood, house, Ontario-place, Chapel Allerton Hall estate; S. Grove, two semi-detached houses, Wensley-avenue, Stainbeck-lane, Chapel Allerton; J. Chaters & Son, six semi-detached houses, Kirkstall-avenue, Victoria Park estate; W. Teal, two semi-detached houses, Cambridge-gardens estate, Leeds, and Bradford-road, Bramley; E. Musgrave Gaunt, house, Sandiford-terrace, Cross Gates; W. Bradford, house, Ontario-place, Chapel Allerton Hall estate; F. Brandwood, house, Grove Hall-drive, Beeston.

LEICESTER.—Mr. W. H. Riley, F.R.I.B.A., has prepared plans for a bus garage to be erected at Abbey Park depot, at a cost of £11,000.

LEXDEN.—The R.D.C.'s Housing Committee submitted proposals for the erection of 124 houses, as follows: Abberton, 4; Aldham, 4; Birch, 6; Chappel, 6; Wakes Colne, 6; Copford, 4; Dedham, 4; East Donyland, 6; Fingringhoe, 6; Fordham, 2; Little Horkesley, 2; Langenhoe, 4; Langham, 6; Layer-de-la-Haye, 6; Layer Marney, 6; West Mersea, 8; Messing, 10; Mount Bures, 6; Salcot, 4; Stanway, 10; Great Tey, 8; and Marks Tey, 6. The Council decided to apply to the M.H. for permission to build the houses.

LINCOLN.—The Lindsey C.C. resolved to contribute £2,500 to the cost of new buildings and equipment at the Midland Agricultural and Dairy College.

LIVERPOOL.—Messrs. Macfie & Sons, sugar refiners, have decided to convert their premises into a sugar beet factory if the Goole farmers will supply sufficient beet.—The T.C. recommend that application be made to the M.H. for their sanction to the borrowing of the sum of £31,890 to cover the cost of a new story on the municipal buildings.—The Corporation propose to erect public baths and washhouses in Minshell-street, at an estimated cost of £21,600.

LONDON (CITY).—Science buildings to cost £18,250 are to be erected at the City of London Schools.

LONDON (CLAPHAM).—On the Common a refreshment pavilion is to be erected for 100 people.

LONDON (FULHAM).—Tenders are invited for sanitary accommodation at the Peterborough school, Fulham, subject to the expenditure not exceeding £775 and approval of the B.E. being obtained.

LONDON (HAMMERSMITH).—A new swimming bath is to be erected in South Hammersmith.

LONDON (ISLINGTON).—The L.C.C. recommend the borrowing by the B.C. of £700 for housing.—Subject to the approval of the B.E., additional sanitary accommodation is to be provided for the staff and children of the Ecclesbourne-road L.C.C. school. Expenditure must not exceed £1,143. Tenders are to be invited.

LONDON (POPLAR).—The L.C.C. recommend the borrowing by the B.C. of £4,750 for housing purposes.

MANCHESTER.—The T.C. passed plans: Two houses, Ackroyd-avenue, Gorton; electrical engineering works, Melba-street and Ezard-street, Openshaw; five lock-up shops, Queen's-road and Oldham-road; two houses, Rectory-road, Crumpsall; two houses, Hill-lane, Blackley; Sunday school adjoining chapel, Beresford-road, Rusholme; house, Withington-road, Withington; revised block plan, three houses, Manley-road, Withington.—The City Council agreed to instal another 200 beds for tuberculous children at Abergele Sanatorium, in North Wales, as the first part of a scheme which, when complete, will add 546 beds.

MARKET HARBOROUGH.—The U.D.C. is advocating the widening of Northampton-road river bridge.—Plans passed: House, Great Bowden-road, for Mr. H. H. Garlick; house, Great Bowden-road, for Mr. B. Richards.

MERTHYR TYDFIL.—Tenders are to be invited for erecting 46 houses at Heolgerrig.

MILFORD.—The M.H. has approved of block plans for the proposed sanatorium to be erected by the Surrey C.C.

MITCHAM.—Surrey County Architect has been asked to prepare plans for a central school.

MORECAMBE.—The E.C. has decided to erect a special subjects' school adjoining the Duke-street school.—The T.C. has accepted a design of the B.S. for laying out the park at Torrishoime and is to invite tenders. Tenders are also to be sought for the lay-out of the Happy Mount recreation ground. Plans passed: Two houses, Lodges-grove, for Mr. A. Barrow; two houses, Sulby-grove, for Messrs. Moore & Co.; two houses, West End-road, for Mr. H. Goldsborough.

NELSON.—The C.C. have completed the purchase of a site of 11¾ acres, for the erection of a new secondary school, estimated to cost £50,000.—It is reported that Messrs. Mark Nutter, Ltd., cotton manufacturers, Parkfield Mills, are to erect a new mill for the manufacture of artificial silk.

NEWCASTLE.—A new block of business premises is to be erected in Pudding Chare, for Messrs. H. Wilson & Co., and the Victoria Manufacturing Co. This will have a frontage of 80 ft., and will comprise four stories. The contract has been let to Messrs. James Lunn & Son, Newcastle; and the architect for the scheme is Mr. M. K. Glass, Saville-row, Newcastle.

NEWMARKET.—The U.D.C. resolved that the construction of the 14 parlour houses nearest Newmarket on the Laureate Paddocks site should be proceeded with as soon as possible and that the Surveyor be authorised to advertise for tenders. The M.H. has given formal sanction to the borrowing of £503 and £5,397 for the purchase of land and the erection of houses on the Stamford-street site.

NEWPORT (I.O.W.).—The T.C. is to invite tenders for houses.—A new quay wall is to be constructed at Little London, at a cost of £300.—Plans passed: Two houses, Carisbrooke-road, for Messrs. Stratton & Millgate; house, Avondale-road, for Mr. J. H. Wavell.

NORTHFLEET.—A committee of the U.D.C. is considering the provision of a public slaughterhouse.—Plans passed: House, Park-avenue, for Messrs. Hopkins & Sons; house, Perry-street-road, for Mrs. J. Gardner.

ORRELL.—The D.C. propose to proceed with the erection of a further 30 houses.

OSSETT.—The B.E. is to discuss plans for school improvements.—Plans passed: Warehouse at Moorcroft Mills, for Messrs. Hepworth Bros., Ltd.; house, Warneford-avenue, for Mr. J. B. France.

OTLEY.—The U.D.C. has decided to erect another 50 houses on the Carr Green estate.—Plans passed: Lay-out of new building estate, Leeds-road, for Mr. F. W. Robinson; bungalow, Leeds-road, for Mr. F. W. Robinson.

PETERBOROUGH.—The L.N.E.R. has promised to consider the provision of a central station in the town.—The City Engineer is to prepare plans for the provision of non-parlour houses on the Westwood Grange estate.—Ten houses are to be built on a site at Star-road.—Plans passed: Two houses, Park-road, for Mr. Pringle; bungalow, Grange-road, for Mr. Headen; 10 houses, Grange-road, for Mr. R. Jellings; two houses, Fairfield-road, for Messrs. Corner & Campion; house, Gladstone-street, for Mrs. Parker.

PLYMOUTH.—Plymouth housing committee recently approved plans for the erection of 38 houses, containing sixty flats, at an estimated cost of £20,299.

PRESTON.—The T.C. passed plans: C. Bamford, three houses, St. Thomas's-road; A. Swarbrick, two bungalows, Inkerman-street; W. Smirk, 10 houses, Powis-road; W. Petch, two houses, Selborne-street; H. Adamson, two houses, Primrose-grove; R. Mercer, two houses, St. Stephen's-road; G. Moorcroft, 10 houses, Ribbleton-avenue and Woodside-avenue; W. Hill, two houses, Symonds-road; J. Masheter, 11 houses, Ashworth-grove; J. Nightingale, house, and house and shop, Brackenbury-road; A. Royle, house, St. Thomas's-road; J. H. & W. Mangan (Mr. Marsden), bungalow, Ribbleton-avenue.

REIGATE.—It has been decided that the new secondary school for girls shall be erected on the Lodge estate site.

ROMFORD.—The U.D.C. received a letter from the Essex C.C. asking them to co-operate with other councils in preparing a regional town-planning scheme for South Essex.—Plans for the new St. Edward's School are about to be sent to the B.E. The building will hold 350 children.

RUGBY.—RUGBY U.C. has decided that plans and a scheme for the provision of 100 houses be prepared at Eastlands Estate.

RYDE (I.O.W.).—The Southern Railway Co. has decided to concentrate its workshops at Ryde.

ST. HELENS.—The T.C. passed plans: Mr. J. L. Vercoe, house and shop, Shaw-street and Clifton-street; Mr. W. Dixon and Mrs. M. Molyneux, two cottages, Haresfinch-road; bungalow, Prescot-road, for Mr. E. J. Cook; alterations and conversions to 10 cottages, 13 to 31, Crossley-road, for Messrs. Pilkington Bros.; Jos. Vose, four houses, Wynne-road; T. Plich, garage, Wolseley-road; S. Huyton, four houses, Powell-street.

SALFORD.—A site in West-street is to be purchased for the erection of an electricity sub-station.

SIDMOUTH.—The U.D.C. is considering sea defence works.—The provision of houses is under consideration.—Messrs. E. Barnard & Co. are to construct a house in Woolbrook.

SKELLOW.—The West Riding E.C. propose to erect a new school at Skellow.

SLEAFORD.—The U.D.C. is selling building plots to Messrs. G. C. Ellis, E. Moss, A. S. Butlet, A. W. Peach, and E. A. Fransham.

SOUTHEND.—The T.C. has decided to erect a town hall in Victoria-circus. If this site is chosen the scheme will involve the removal of a boys' secondary school and an art school. The total cost of the hall, including new sites for and rebuilding of the schools, will be £66,000.

SOUTHGATE.—The erection of a swimming bath is now being proposed by the D.C.

SOUTHPORT.—The Sub-Committee of the T.C. has considered plans prepared by the Borough Engineer for the better utilisation of the property acquired by the Corporation at the corner of Sharrock-street and East-bank-street, by pulling down the present building and re-erecting on the site three new shops fronting to Eastbank-street, with two stories of office accommodation over the same at an estimated cost of £11,000.—The Finance Committee have also considered the advisability of erecting new weights and measures offices on the ground floor adjoining the new transformer chamber in Sharrock-street, with a new gallery over the same on the first floor as an extension of the existing Art Gallery, connected by two wide corridor galleries, at an estimated cost of £9,000.

SOUTH SHIELDS.—Plans have been passed for submission to the M.H. for a new hospital at Cleadon Park.—The M.H. has suggested a new hospital for isolation purposes in preference to the proposed extensions at the Deans Hospital.—The South Foreshore is to be developed at a cost of about £10,000.—The High School Governors propose extensions to cost £2,500.—Plans are to be prepared for the erection of a handicrafts centre at Westoe.—The St. Hilda's Miners' Lodge is to erect 103 houses on the Bents estate.—Plans passed: 12 houses, Wenlock-road, for L.N.E.R.; eight houses, Wantage-road, for Messrs. Page & Son.

SOWERBY BRIDGE.—The U.D.C. is to erect an additional 16 scullery-type houses on the Beach Estate.

STAINFORTH.—A contract has been let for the erection of a new Wesleyan church hall, estimated to cost about £8,175. Plans have been prepared by Messrs. Gelder & Kitchen, of Hull.

STALYBRIDGE.—The T.C. is to prepare plans for converting West Hill buildings into a school.—Plans passed: Bungalow, Mottram Old-road, for Mr. H. Axford.—Sanction is being sought to borrow £2,240 to facilitate the erection of houses, on Corporation land off Taylor-street, by Mr. T. C. Hayes.

STOURBRIDGE.—The T.C. passed plans: Two houses in High Park-avenue, Mr. J. C. Wells; house, Bridgnorth-road, Mrs. Z. Pearson.

SUTTON COLDFIELD.—Plans passed by the T.C.: Institute, Maney Hill-road, for the Churchwardens of St. Peter's Church; five houses, Birmingham-road, for Messrs. A. Francis, Ltd.; six houses, Clarence-road, for Mr. R. Streather; house, Four Oaks-road, for Mr. R. Streather; bungalow, Four Oaks-Common-road, for Mr. W. Rogers; house, Goldieslie-road, for A. Francis, Ltd.; bungalow, Gate-lane, for Mr. J. Neale; two houses, Green-lanes, for Miss M. Davis; bungalow, Hollyfield-road, for Miss Pywell; house, Hill Village-road, for Mr. T. E. Mann; house, Maney Hill-road, for Mr. Anderson; house, Maney Hill-road, for Miss Fryer; house, Myring-place, for Mr. W. A. Gowles; house, Walmley Ash-road, for Mr. F. H. Frost; house, Stone-house-road, for Mr. C. McWhirter; house, Orphanage-road, for Mrs. E. E. Foster.

THIRSK.—The proposed new Institute for Thirsk and Sowerby, to be built on the Flatts, is to be a one-story building. The cost will be £2,000.

TICKHILL.—The Surveyor to the U.D.C. has been instructed to obtain estimates for the erection of a new fire station.

TORQUAY.—The T.C. approved plans: House in Broadpark-road, for Mr. Phare; two houses in Castle-road, for Mr. F. W. Phare; house at Blacks-hill, for Mr. E. Faulkner; 18 houses, in road at the rear of St. Annes-road, for W. A. Pering & Son; house in Lydwell-road, for Mr. Mohun; house in the new road off Petitor-road, for Mr. Wall; four houses rear of Ellacombe Church-road, for Mr. H. Lock; two bungalows at the rear of Dunmere-road, for Mr. R. E. Narracott; four houses in Sherwell Valley, for the Chelston Building Co.; house on the Livermead estate, for Mr. W. Nicholson; house at the rear of Forest-road, for Mr. J. Colner; house in Oxlea-road, Lincombe-hill, for Mr. Crosland; bungalow in the new road off Clennon-lane, for Mr. A. F. Kellow; bungalow in the Newton-road, for Mr. G. H. Sleeman; spiritualist chapel at the rear of 34 and 36, Princes-road, for Mr. H. E. Williams; house in the Lincombe-drive, for Mr. Smart; house at Broadpark-road, for Mr. Welch.

WALLINGTON.—Revised plans have been prepared by the Surrey County Architect for the county school for girls, the estimated cost of the scheme now being £36,885.—The County E.C. has secured a site at Manor Park for a secondary school for boys.

WALTHAMSTOW.—The U.D.C. passed plans: J. Winkle, two houses, Woodstock-road.

WARRINGTON.—The Borough Surveyor of the C.B. submitted the lay-out plan for the erection of the further 54 houses to be built by Messrs. George Holmes & Co. and Mr. Peter McLachlan on the Reynolds-street site, which was approved.—The Borough Surveyor submitted a lay-out plan for a further 28 houses to be erected by Messrs. R. & S. Smith in Venn-street, which was also approved.—The C.B. passed plans: Substation, Thelwall-lane, for the Electricity Committee; nine houses, Lovely-lane, for Messrs. W. & A. Ashton; lock-up shop, Wellfield-street, for Mr. W. Horsfall.

WATFORD.—The R.D.C. decided that the Surveyor should be instructed to formulate schemes for building houses on land belonging to the Council available for that purpose.

WELLINGBOROUGH.—The U.D.C. passed plans: Three houses, Doddington-road, two Midland-road, six on Finedon-road, and one each on Senwick-road and The Drive.—The Ministry has agreed to the Council granting subsidies in respect of 40 further houses.

(*Continued on* p. 132.)

PRICES CURRENT OF MATERIALS

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 3 6
Second Hard Stocks	3 18 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.
Fletton, at King's Cross	2 13 3
Do. grooved for plaster	2 15 3
Do. Bullnose	2 8 3
Best Stourbridge Fire brick:—	
2½ in.	8 11 0
3 in.	10 3 0

GLAZED BRICKS—

	£ s. d.
Best White Ivory and Salt Glazed Stretchers	23 0 0
Headers	22 10 0
Quoins, Bullnose and 4½ in. Flats	29 10 0
D'ble Str'tch'rs	31 10 0
D'ble Headers	28 10 0
One Side and two Ends	32 10 0
Two Sides and one End	33 10 0
Splays and Squints	31 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s. d.		s. d.
2 in. per yd. super	2 1	3 in. per yd. super	2 11
2½ in. "	2 6	4 in. "	3 6

	s. d.	
Thames Ballast	10 6	per yard.
Fit Sand	13 9	" "
Thames Sand	14 6	" "
Best Washed Sand	14 6	" "
¾ in. Shingle for Ferro-Concrete	12 9	" "
¾ in. "	14 0	" "
¾ in. Broken Brick	11 6	" "
Pan Breeze	7 6	" "

delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.

	£ s. d.
Best Portland Cement, British Standard Specification. Test £2 18 0 to £3 5l /- alongside at Vauxhall in 80-ton lots.	3 6
Ferrocrete per ton extra on above	0 10 0
Super Cement (Waterproof)	4 8 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" " Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	5 12 0
Sirapite, Coarse	3 9 0
" Finish	3 17 0
Grey Stone Lime	2 11 9
Chalk Lime	2 11 9
Best Ground Blue Lias Lime	2 4 6
Hair	17 0 0
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months, carr. pd.

Stourbridge Fireclay in s'cks 35s. 0d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 9½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2 11½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4
Do. do. delivered on road wagons at above stations, per ft. cube	4 5
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every 20 ft. *average*, and ¼d. beyond 30 ft.	cost over
HOPTON-WOOD STONE.	
Delivered at any Goods Station, London.	
Small random blocks, up to 10 ft. cube. Per ft. cube	7 /-
Random blocks from 10 ft. and over "	17 /-
Sawn two sides "	27 /-
Sawn three or four sides "	32 /-
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station London.	s. d.
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super	5 6
6 in. rubbed two sides, ditto "	6 0
3 in. sawn two sides slabs (random sizes) "	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 6½
1½ in. to 2 in. ditto, ditto "	1 4
HARD YORK—	
Delivered at any Goods Station London.	
Scappled random blocks Per Ft. Cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super.) Per Ft. Super	5 1½
6 in. rubbed two sides ditto "	6 1½
4 in. sawn two sides slabs (random sizes) "	2 10
3 in. ditto. ditto "	2 1½
2 in. self-faced random flags Per Yard Super	9 0

ARTIFICIAL STONE.

Delivered in London Area in full van loads, per ft. cube:—Plain, 6s. 6d.; Moulded, 7s. 9d.; Cills, 8s. 3d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
6 × 11	£32 0	3 × 6	£23 0
6 × 9	28 0	3 × 11	28 0
6 × 5	26 0	2 × 11	28 0
4 × 7	25 0	3 × 9	25 0
3 × 9	24 0	2½ × 9	25 0
3 × 7	23 0	3 × 4½	24 0
2½ × 7	22 0	3 × 3	24 0

PLANED BOARDS.

1 × 11	£31 0
1 × 9	£30 0

WOOD (*Continued*).

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
¾	21/-	1¼	32/6
¾	23/-	1¼	37/6
1	25/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.
1	25/-
1¼	32/6
1½	37/6

MATCHINGS (BEST).

Inches	per sq.
¾	16/6
¾	20/-
1	25 -

BATTENS

Inches	s. d.
¾ × 2	2 6 per 100 ft.

SAWN LATHS.

Per bundle	0 2 6
Dry Wainscot Oak, per ft. super, as inch	0 2 0 to 0 2 6
¾ in. do. do.	0 1 6 to 0 2 0
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 1 9 to 0 2 6
Cuba Mahogany	0 3 0 to 0 3 6
Teak (Rangoon, Moulmein or Java), per ft. cube	0 14 0 to —
American Whitewood planks, per ft. cube	0 12 0 to 0 14 0
Best Scotch Glue, per cwt.	4 10 0 to —
Liquid Glue, per cwt.	4 7 0 to 5 10 0

SLATES.

1st quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12	37 12 6	18 by 10	21 2 6
22 by 12	34 0 0	18 by 9	18 12 6
22 by 11	31 5 0	16 by 10	17 12 6
20 by 12	29 15 0	16 by 8	13 15 0
20 by 10	25 12 6		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	5 12 6
Ditto hand made ditto	5 17 6
Ornamental ditto	6 2 6
Hip and valley tiles (per dozen) Hand made	0 9 6
Hip and valley tiles (per dozen) Machine made	0 7 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	13 10 0
Plain Compound Girders	15 10 0
" Stanchions	17 10 0
In Roof Work	20 10 0

MILD STEEL ROUNDS.

To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
½ in.	16 10 0	⅝ in. to ¾ in.	13 10 0
¾ in.	14 10 0	⅞ in. to 2½ in.	13 0 0

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes. All sizes	Fittings. ½"&up.	Fittings. ¼"to½" inclusive.	Flanges ½"&up.	Flanges ¼"to½" inclusive
Black Gas	50 %	50 %	47½ %	60 %	57½ %
Blue Water	45 %	45 %	42½ %	55 %	52½ %
Red Steam	40 %	40 %	37½ %	50 %	47½ %
Galv'd Gas	35 %	40 %	37½ %	50 %	47½ %
" Water	28½ %	35 %	32½ %	45 %	42½ %
" Steam	22½ %	30 %	27½ %	40 %	37½ %

C.I. HALF-ROUND GUTTERS—London Prices, ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/1	11d.	3½d.
3½ in.	1/2½	1/0½	3½d.
4 in.	1/4	1/1½	3½d.
4½ in.	1/5½	1/4	4d.
5 in.	1/7½	1/5½	5d.
O.G. GUTTERS.			
3 in.	1/6½	1/2½	3½d.
3½ in.	1/6½	1/2½	3½d.
4 in.	1/7½	1/4	3½d.
4½ in.	1/9½	1/6½	4d.
5 in.	2/1½	1/9	5d.

RAIN-WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/7½	1/1½	1/8
2½ in. "	1/9½	1/4	2/0½
3 in. "	2/1½	1/8	2/5½
3½ in. "	2/6½	1/11½	2/10½
4 in. "	2/11½	2/4½	3/5½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts plain	3 0½	2 2½	2 8
2½ in. "	3 6½	2 5½	3 3½
3 in. "	4 2½	2 8	4 0½
3½ in. "	4 7	3 3½	4 8½
4 in. "	5 1	3 9½	5 5

L.C.C. COATED DRAIN PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches stock angles. s. d.
3 in. per yd. in 9ft. lengths	4 9	5 8	8 10
4 in. "	6 3	6 8	11 4
5 in. "	7 8	11 6	18 2
6 in. "	8 10	14 4	23 5

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	13 10 0	to	14 10 0
Staffordshire Crown Bars—good merchant quality	14 10 0	—	15 10 0
Staffordshire "Marked Bars"	17 0 0	—	18 0 0
Mild Steel Bars	12 0 0	—	13 0 0

METALS (*Continued*).

	£ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, basis price	12 10 0	..	13 10 0
Hoop iron, basis price	16 10 0	..	17 10 0
" Galvanised	31 0 0	..	32 0 0
Soft Steel Sheets, Black—			
Ordinary sizes to 20 g.	14 10 0	..	15 10 0
" " " 24 g.	15 10 0	..	16 10 0
" " " 26 g.	17 10 0	..	18 10 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—			
Ordinary sizes, 6 ft. by 2 ft. to 20 g.	21 0 0	..	22 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	22 10 0	..	23 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	24 10 0	..	26 10 0
Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	20 10 0	..	21 10 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	21 0 0	..	22 0 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	23 0 0	..	24 0 0
Sheets Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	23 10 0	..	24 10 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 10 0	..	26 10 0
Best Soft Steel Sheets, 26 g.	26 0 0	..	27 0 0
Cut Nails, 3in. to 6 in.	20 10 0	..	22 0 0

(under 3in. usual trade extras.)

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/4 to 1/7 per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
LEAD—Sheet, English, 4 lb. and up	53 10 0
Pipe in coils	54 0 0
Soil Pipe	57 0 0
Compo pipe	60 0 0

NOTE—Country delivery, 30s. per ton extra: lots under 3 cwt., 2s. per cwt. extra and over 3cwt. and under 5 cwt., 1s.6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

	£ s. d.		£ s. d.
Old lead, ex London area, at Mills per ton	40 0 0	..	—
Do., ex country, carriage forward per ton	41 0 0	..	—

COPPER.

	s. d.
Seamless Copper tubes (basis) per lb.	1 1½
Strong sheet "	2 3
Thin "	2 4
Copper nails "	2 3
Copper wire "	2 4

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

NEW RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2in.
7/6	11/6	17/-	29/-	36/-	63/- per doz

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1¼ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/- "

TIN—English Ingots, 2/7 per lb. SOLDER—Plumbers' 1/3, Tinmen's 1/5, Blowpipe 1/6 per lb.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil, in pipes per gallon	0 4 4
" " " in barrels "	0 4 6
" " " in drums "	0 4 9
Boiled " " in barrels "	0 4 9
" " " in drums "	0 5 0
Turpentine in barrels	0 5 6
" in drums (10 gall.)	0 5 9
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	63 5 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Spedol" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered	85 10 0
Red Lead, Dry (packages extra) per ton	58 0 0
Best Linseed Oil Putty per cwt.	0 15 0
Filocol per cwt.	0 15 6
Size, XD Quality tkn	0 3 6

Continued on next page.

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per Ft.		Per Ft.
15 oz. fourths ..	3½d.	32 oz. fourths	8½d.
15 „ thirds	4½d.	32 „ thirds	10½d.
21 „ fourths ..	5d.	Obscured Sheet, 15 oz.	4d.
21 „ thirds	6½d.	„ 21 „	5½d.
26 „ fourths ..	6d.	Fluted 15oz. 6½d., 21oz.	9½d.
26 „ thirds	7½d.	En'lled 15oz. 5½d., 21 oz	7½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4½d.
⅞ Rough rolled	5½d
¼ Rough rolled	5½d
Figured Rolled, Baltic, Oceanic, Arctic, Stippolyte and small and large Flemish white..	6½d.
Ditto, tinted	9d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d

Cast Plate is same price as rough rolled.

VARNISHES, &c.

		Per gallon £ s. d
Oak Varnish	Outside	0 14 0
Fine ditto	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best Ditto	ditto	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal Flatting	ditto	1 0 6
Hard Drying Oak.....	ditto	0 18 0
Fine Hard Drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 0
Best ditto	ditto	1 12 0
Best Japan Gold Size		0 10 0
Best Black Japan		0 10 6
Oak and Mahogany Stain (water).....		0 12 0
Brunswick Black.....		0 7 6
Berlin Black		0 14 6
Knotting (patent)		1 5 0
French and Brush Polish		0 17 0
Liquid Dryers in Terebine.....		0 9 0
Cuirass Black Enamel.....		0 7 0

PROPOSED NEW BUILDINGS

(*Continued from p.* 130.)

WEYMOUTH.—The T.C. passed plans: Mr. J. F. Annan, pair of houses, Icen-road; Jesty & Baker, for Mr. E. Denton, eight semi-detached houses proposed to be erected in Old Castle-road.

WHITEHAVEN.—The B.S. has been instructed to prepare a plan for a road connecting Victoria-road with the Loop-road.—Plans are to be prepared for alterations at the Town Hall, including the provision of a Mayor's parlour and adaptation of war pensions offices as committee rooms.—Plans passed: Two houses, Earl's-road, and depot at Old Shipyard.—The T.C. is negotiating regarding land for housing.

WIMBLEDON.—The B.C. passed plans: W. H. Whitehead & Co., three houses, Conway-road; A. W. T. Richards, four terrace houses, Worple-road, at junction of Spencer Hill-road.

WOLVERHAMPTON.—The T.C. approved plans: W. G. Birkinshaw & Co., Ltd., warehouse, Derry-street; F. J. Butter, house, Richmond-road; J. Dews, bungalow, Clark-road.

WOODFORD.—The U.D.C. has passed plans for 22 shops in High-road and George-lane, and six houses in King's-avenue.

WORTHING.—The T.C. approved plans: Shop and dairy, Tarring-road, for V. Lloyd Bostock, submitted by A. M. Butler; house and shop, Rowlands-road, for W. Taylor, by T. R. Hyde; house, Ladydell-road, for G. T. Hales, by H. Bird; house, Bulkington-avenue, for A. H. Leatherdale, by J. E. Lund; two houses, Longfellow-road, for G. Baker & Son, by G. Baker & Son; two houses, Grand-avenue, for E. H. Barton, and house, Grand-avenue, for E. H. Barton; church and school buildings, side of High-street, for St. James's Hall Church, by S. J. Henman; two houses, Ladydell-road, for E. J. Standen, by H. Bird; five shops, three houses, Broadwater-street West, for R. W. H. Green, by Long & Jenner.

YORK.—The T.C. passed plans: H. DeBurgh, two houses, Albemarle-road; F. J. Bell, two houses Chestnut-avenue; York Gas Co., house, Foss Bank; Hetherington, two cottages, Moorgate.

The Royal Sanitary Institute.

The Jubilee of The Royal Sanitary Institute falls in 1926, and it has been decided to celebrate this occasion by holding a Congress in London as the centre most appropriate for representing its widespread work, and it is hoped to make it an opportunity for gathering together those engaged in Public Health work from all parts of the Empire and for bringing responsible opinion to bear on the many questions affecting the health of the people.

BUILDING SURVEYORS' ASSOCIATION

A MEETING of the Building Surveyors' and Inspectors' Association was held at the College of Technology, Manchester, on January 10.

A paper was given by Mr. F. E. Drury (Lecturer on Building Construction, Manchester University, Head of Building Department, College of Technology, Manchester) on "Reinforced Concrete: Some Points of Importance in Practical Design."

Mr. Drury, in his opening remarks, expressed his very favourable opinion on the formation of an Association such as the one he had the pleasure of addressing, also his willingness to give at any future date the best of his technical support in furthering the project of the Association.

The Secretary reported that the membership was steadily increasing and they were now in a position to formulate an examination scheme, as the Council of the Royal Institute of British Architects had agreed to the slight modification of their Building Surveyors' Examination Syllabus. This standard had now been set as the qualification of membership, and a committee had been appointed to arrange the examination scheme, particulars of which might be had in the course of a week or so from Mr. M. Crossland, Lit. and Organising Secretary, 45, Town-street, Armley, Leeds. The Association, he stated, is now on a sound footing, and by this step of setting a standard for membership will be doing good service to the public, in so much as an authority requiring a building surveyor or inspector, will know at once that if an applicant is a member of the B.S. and I.A. he is fully qualified for the post and capable of carrying out those numerous technical and other duties which fall to the lot of a building surveyor.

BUCKS ROAD IMPROVEMENTS

AN interesting and extensive road improvement has recently been carried out in Buckinghamshire by the County Highways Department under the jurisdiction of the County Surveyor, Mr. E. Winfield, M.Inst.M. and C.E. The site of the work is the Aylesbury-Bicester main road between the Oxford County boundary and Sharp's Hill, Ludgershall. The chief features of the project have been the making up of the road quarters with concrete slabs reinforced on the "B. and T." method, the laying of submerged kerb, also of reinforced concrete, and the laying of some 26,101 super yards of asphaltic slag, put down to a 3 in. specification by Messrs. William Shepherd & Sons, Ltd., of Rochdale. The accompanying photographs, which are both taken from exactly the same point, show the work before and after completion.

BUILDING MATERIALS COMMITTEE

THE late Minister of Health announced on October 10 last that, in pursuance of undertakings given when the Housing (Financial Provisions) Act, 1924, was before the House of Commons, he had taken steps to appoint committees of the building industry and of the manufacturers and suppliers of building materials to assist him in carrying out the scheme embodied in the Act, particularly as regards the development and co-ordination of the supply of labour and materials for house building. The constitution of the Building Industry Committee was published on the date mentioned, and the late Minister intimated that a separate committee representative of the manufacturers and suppliers of building materials was in process of formation.

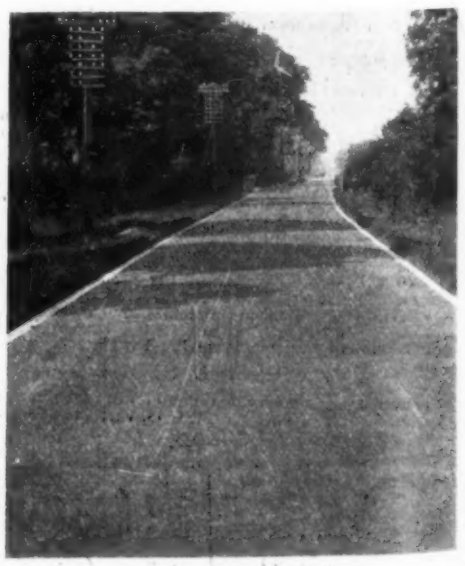
The present Minister of Health has confirmed the appointment of the Building Industry Committee and has approved the appointment of the Committee of Manufacturers and Suppliers of Building Materials, which has been constituted as follows: Messrs. H. J. C. Johnston, G. Andrews, G. Barlow, F. G. Foster, J. J. Greenwood, J. King, E. H. May, C. E. Morris, J. A. Pratt, H. W. Rogers, P. M. Stewart, E. G. Vevers, W. H. Wright, H. Halliday, and Col. A. J. Foster.

It is contemplated that representatives of the employers and operatives in the building industry shall be added to the above Committee. The duties of the Committee are to assist the Minister of Health and the Secretary for Scotland with expert advice on the supply of materials for housing with particular reference to making available supplies of such materials in such quantities and at such places as may be required, and to keep him informed as to any relevant matters connected with difficulties of transport, expansion of supply, standardisation of materials, probable course of prices, and possible means of dealing with rise of prices if experienced, or providing alternative materials.

New Liverpool Building.

Foundations are now being laid for a big building for Messrs. The Ocean Steamship Co., Ltd., between Water-street and Brunswick-street. The contractors are Messrs. W. Moss & Sons.

BEFORE COMPLETION.



AFTER COMPLETION.

Bucks Road Improvements.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	6
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	32	0
Add if in underpinning in short lengths	" "	7	0
Add if in floors 6 in. thick	" "	3	3
Add if in beams	" "	3	9
Add if aggregate 1 . 2: 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	30	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	1	10	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—

		s.	d.
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	4	3
Three-quarter-inch vertical damp course	" "	8	6
¾ inch on flats in two thicknesses	" "	6	3
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	2

MASON.

		s.	d.
York stone templates fixed	per foot cube	13	0
York stone sills fixed	" "	22	0
Bath stone and all labour fixed	" "	10	6
Portland stone fixed	" "	20	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	"	80	9
Do. 24 in. × 12 in. Do. Do.	"	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	0
Do. joists	" "	5	6
Do. roofs, floors and partitions	" "	6	0
Do. trusses	" "	8	6

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	35/6	40/-	45/-	72/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	50	0
Do. to beams	per ft. sup.	1	0
Centres for arches	"	1	6
Gutter boards and bearers	"	1	0

FLOORING.

		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		44/6	53/-	60/6
Do. tongued and grooved	"		49/-	57/6	65/-
Do. matchings	"	45/-	51/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/0	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	3	9

DOORS.

		1¼"	1¾"	2"
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	"	2/5	2/8	2/11
Two-panel moulded both sides	"	2/8	2/11	3/2
Four-panel Do. Do.	"	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	"	1/4	1/6	1/9
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	"	19	0
Do. stanchions	"	21	9
In roof work	"	27	6

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/6	1/9	2/-	2/6
Ogee Do. Do.	"	1/9	2/-	2/6	3/3
Rain-water pipes with ears	"	1/9	2/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	68	6
Do. Do. in flats	"	67	6
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	6
Copper nailing	" "	0	6

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/2	1/9	2/0	3/4	4/0	
Do. service	"	1/8	2/2	2/7	3/10		6/9
Do. soil	"						
Bends in lead pipe	each					3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"				14/7	19/6	
Bib cocks and joints	"	6/4	9/7	15/4	41/-		
Stop cocks and joints	"	15/4	17/2	25/8	64/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	4
Do. Do. Sirapite	" "	2	7
Do. Do. Keen's	" "	3	7
Add sawn lathing	" "	1	7
Add metal lathing	" "	2	6
Portland cement screed	" "	1	11
Do. plain face	" "	3	3
Mouldings in plaster	per 1 girth	0	1¾
One-and-a-half granolithic pavings	per yard sup.	5	9

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	0	8
26 oz. Do.	" "	1	0
Obscured sheet	" "	1	1
¼ in. rolled plate	" "	0	9
¼ in. rough rolled or cast plate	" "	0	10½
¼ in. wired cast plate	" "	1	4

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece	2/- to 4/	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

NEW COMPANIES

The particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 & 119, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

Smithson, Coote & Co., Ltd. (201,546). Registered November 7. Builders' merchants, tiling contractors, fireplace and sanitary specialists. Nominal capital, £5,000.

H. L. Darvill & Son, Ltd. (201,541). Registered November 7. Gravel and sand merchants and cartage contractors. Nominal capital, £4,000.

David Neale, Ltd. (201,510). Registered November 6. 91, Abbey-road, St. John's Wood, N.W. Glass, lead, tile, zinc, varnish, stove, range, oil and colour. Nominal capital, £10,000.

Ashby Contractors, Ltd. (201,483). Registered November 5. Quarry owners, stone merchants, contractors, &c. Nominal capital, £5,000.

Joseph Burnham, Ltd. (201,501). Registered November 5. 9, Akenside-terrace, Newcastle-on-Tyne. Painter and decorator. Nominal capital, £1,000.

J. H. Wood & Co., Ltd. (200,488). Registered September 18. 20, St. Columba-street, Leeds. Builders and contractors. Nominal capital, £7,000.

Staffordshire Public Works Co., Ltd. (200,470). Registered September 17. Public works and general contractors. Nominal capital, £5,000.

London & Eastern Prefacto Co., Ltd. (200,518). Registered September 20. 6, Broadway, Westminster, S.W.1. Builders and contractors, manufacturers and dealers in factocrete, novocrete, novocrete liquids, &c. Nominal capital, £1,000.

Lister-Mawby (Builders), Ltd. (200,550). Registered September 22. Builders and contractors, &c. Nominal capital, £5,000.

E. E. Dickinson, Ltd. (200,576). Registered September 23. Builders and contractors. Nominal capital, £5,000.

Hightrees Development Co., Ltd. (301,642). Registered November 12. Balfour House, 119–125, Finsbury-pavement, E.C.2. Builders, contractors, architects and surveyors, &c. Nominal capital, £4,000.

C. Leech & Co., Ltd. (201,689). Registered November 14. 116, Albany-road, Cardiff. Builders and contractors, &c. Nominal capital, £500.

James Longley & Co., Ltd. (201,767). Registered November 17. Steam Joinery Works, Crawley, Sussex. Builders and contractors, decorators and furnishers. Nominal capital, £20,000.

Williams's Coal & Cement Co., Ltd. (201,745). Registered November 15. 4, Penrynstreet, Redruth, Cornwall. Timber and all building materials, &c. Nominal capital, £20,000.

West London Construction, Ltd. (201,659). Registered November 12. 20, Woodstock-street, W.1. Builders and contractors, &c. Nominal capital, £2,000.

Greenhill & Low, Ltd. (201,640). Registered November 12. Osborne-road, Bedminster, Bristol. Builders and contractors. Nominal capital, £1,000.

A. R. Anderson & Co., Ltd. (201,027). Registered October 15. Public works contractors, quarry owners, brick and tile manufacturers, builders, decorators and general contractors. Nominal capital, £500.

Cement Minerals, Ltd. (201,032). Registered October 16. Manufacturers and merchants of cement minerals. Nominal capital, £500.

Monolith Portland Cement Co., Ltd. (201,064). Registered October 17. Aldwych House, W.C.2. Manufacturers, dealers and workers in cement, lime, plasters, artificial stone, and builders' requisites. Nominal capital, £5,000.

B. H. G. H. Syndicate, Ltd. (201,253). Registered October 25. Manufacturers in bricks, cement, clay, lime, artificial stone and builders' requisites. Nominal capital, £2,000.

PATENTS.

APPLICATIONS PUBLISHED *

223,308.—Smith, Major & Stevens, Ltd., and P. H. Stevens: Hydraulic braking devices for shaft-operated lifts.

209,027.—Fortis Reinforced Concrete Safe Co., Ltd.: Reinforced concrete safes and strong-rooms.

223,335.—J. Sharrocks: Stoppers for water-mains.

223,348.—Dornier-Metallbauten Ges. and C. Dornier: Metal girders.

223,369.—J. F. Haggerty: Plaster wall board.

223,392.—E. M. Edwards: Baths.

219,634.—E. J. Weine and L. G. Bridge: Corrugated metal sheeting for buildings.

223,407.—J. Jewsbury & Co., Ltd., and J. Jewsbury: Hinged joint.

208,695.—J. E. Bell: Heating apparatus.

223,445.—Dr. A. Lampel: Walls.

223,450.—F. H. Headley: Chairs, stools and tables.

223,458.—W. R. Smith: Tubular tiles.

223,461.—J. Langbein: Process for gilding or painting artificial stones.

223,478.—J. Quitadamo: Combination table article.

223,482.—Soc. Anon. Le Progress Industriel Mamurrois: Sawing frames and sawing machines for cutting stone.

212,575.—Fortis Reinforced Concrete Safe Co., Ltd.: Construction of doors for strong-rooms and safes.

223,505.—H. P. Williamson and R. A. Blakeborough: Means for raising liquids.

223,616.—F. L. Duffield: Manufacture of refractory bricks, or blocks, from "Dolomite" or other materials or substances possessing plasticity at a high temperature.

202,965.—L. Courtot.—Combined boiler and kitchen range.

223,653.—B. Morton: Reinforced brick walls or like structures.

201,909.—Soc. Hera.: Sash-raising systems for movable windows.

203,718.—E. C. Bayer: Method of manufacturing porous building materials.

223,720.—J. P. Dovel: Suspension means for power-driven mechanism for breaking metal and rock.

222,426.—Soc. Anon. Des Chaux et Ciments De Larfarge et du Teil: Process for the manufacture of fused cement.

222,427.—Soc. Anon. Des Chaux et Ciments De Larfarge et du Teil: Apparatus for the manufacture of cement by fusion.

223,754.—C. Bailey: Boxes.

223,820.—J. R. Kinley: Building blocks for general constructional work.

220,932.—Waygood-Otis, Ltd.: Electrically controlled lifts, or the like.

223,666.—L. Cox and E. J. Burt: Paving blocks for road surfaces, pavings, floors, bridges, gradients, &c.

207,786.—J. Risler: Process for obtaining phosphorescence in luminous paints.

223,979.—J. Waugh, H. Horsman, and J. W. Rae: Safety device for lifts, pit-cages, &c.

224,006.—A. Marston & Co., Ltd., and S. P. Bryan: Lock and latches.

224,041.—A. G. S. Clarke: Device for bending and shaping wood.

224,043.—R. F. Brown: Prevention of dry rot and wet rot in timber and wood.

224,081.—L. G. Sandford: Collapsible wardrobes, book cases, and like furniture, applicable also to packing cases.

224,089.—Waring & Gillow, Ltd., and C. E. Hughes: Drawers of furniture.

224,114.—H. Frood and Ferodo, Ltd.: Manufacture of paving and like blocks.

224,122.—F. H. Headley: Chairs, stools, and tables.

211,128.—Anaconda Sales Co.: Roofing elements.

224,133.—E. Salz: Clamping arrangement for scaffold poles, &c.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

ABERDEEN.—For extension to the King-street tramway depot, for the T.C.:—

*A. Masson (Mason)	£4,195 13 0
*Calder & Henderson (Carpenter)	1,305 2 0
*Adam & Co. (Slater)	709 0 0
*W. Burnett (Plumber)	357 15 0
*Scott & Son, Ltd. (Concrete)	1,966 9 3
*G. Bisset & Son (Steelwork)	808 14 9
*G. Lamb & Son (Painter)	249 10 0

BARRY.—For erection of 108 houses, for the Garden Suburb, Ltd.:—

*Rogers & Davies, Cardiff.

BIRMINGHAM.—For erection of 1,300 reinforced concrete houses, for the T.C.:—

*M. A. Boswell, Wolverhampton—
Non-parlour type ..... each £425

BRADFORD.—For erection of 70 houses, for the T.C.:—

*J. Robinson & Co., Rotherham—

Housing Scheme No. 10, Thornton—

6 houses in blocks of 2, Class A	£2,751
4 houses in blocks of 2, Class A	1,806

Housing Scheme No. 11, Swain House Estate—

24 houses in blocks of 2, Class A	10,872
20 houses in blocks of 2, Class A	8,920
8 houses in blocks of 4, Class A	3,568
4 houses in blocks of 2, Class A2	1,684
4 houses in blocks of 2, Class A2	1,658

BRADFORD.—For the rebuilding of warehouse at Leeds-road, for Messrs. Angus Rhodes & Co. Mr. P. T. Runton, architect, Ilkley:—

Mason—
*C. Booth & Son.

Joiner—
*Wilkinson & Dawson, Ltd.

Stee'work—
*H. Barnett & Son.

BRIDGEND.—For erection of a new police station, for the Glamorgan Standing Joint Committee:—

*P. Gaylord & Son ..approximately £15,000

CANTERBURY.—For extensions at the electrical works, for the C.B. Mr. P. H. Warwick, City Engineer and Surveyor:—

W. S. Cozens, Canterbury	£2,602
A. Wiltshire, Canterbury	2,527
L. T. Dadds, Canterbury	2,460
*G. Browning, Canterbury	2,165

CARLISLE.—Structural steel work at new generating station, for T.C.:—

*Pratchitt Bros., Carlisle £5,500

CARLISLE.—Erection of 84 houses, for T.C.:—
*J. & R. Bell—

13 Blocks of 4 houses	£18,807 5 3
8 Blocks of 4 houses	10,755 2 0

CHEPSTOW.—For construction of a new main road, for the U.D.C.:—

*Western Trinidad & Asphalte Co., Cardiff..... £9,983 15 3

CROSS HANDS.—For the erection of a proposed new elementary school at Cross Hands, Carmarthenshire, for the C.C. Mr. W. Vincent Morgan, A.R.I.B.A., County Architect:—

D. Howells, Son & Co., Llandebie	£9,895
Charles Thomas & Co., Llandilo	9,648
*Lewis Davies, Penygroes, Llanelly	9,542

(Subject to approval of the B.E. and M.H.)

DARWEN (LANCS).—For the erection of 30 houses on the Spring Vale Garden Village Estate:—

*The Spring Vale Garden Village Co., Ltd.

DONCASTER.—For erection of a new pump house at Nuttwell, for the Corporation:—

*A. Waddington & Son, Doncaster £1,366 15 8

DOVER.—For erection of 15 houses, for the T.C.:—

‡G. Lewis & Sons (Dover), Ltd..... £6,951

EPSOM.—For erection of 20 houses, for the U.D.C.:—

Burnand & Pickett, Wallington	£17,861 10
W. Taylor	15,611 0
H. H. & F. Roll	14,948 0
Cropley Bros.	14,285 0
Harris, Ltd., Woolwich	14,211 0
H. Taylor, Epsom	13,897 0

FOLKESTONE.—For replacing the chimney at the Baths, for the T.C.:—

*Cradley Boiler Co., Cradley Heath £148

GLASGOW.—Erection of baths and washhouses at Dobbie's Loan, for T.C.:—

Engineering work—
‡G. Munro £5,204 18 3

Tile work—
‡Barclay, Mackay & Co., Ltd... 609 16 2½

GLASGOW.—Painting at Govan baths, for T.C.:—

‡M'Kenzie & M'Arthur £624

GLASGOW.—Painting at the Merklands Wharf, for T.C.:—

‡M'Culloch & Co. £794 9 1

GLASGOW.—Painting houses in Knightswood, for T.C. :—
‡Hobbs & Samuels, Ltd..... £10,149 5 5

GLASGOW.—For erection of a new housing scheme at Langlands, for the Corporation :—
Mason—
‡J. Kirkwood & Smith, Ltd. £32,951
Joiner—
‡T. McDougall & Co..... 24,163
Plumber—
‡T Porter & Son 12,200
Slater—
‡P. White & Co..... 5,906
Plasterer—
‡A. M'Kellar 5,007
Glazier—
‡W. Purdon & Son 519
Painter—
‡W. M'Kerracher 1,507
Iron Founder—
‡A. & J. Main & Co., Ltd. 941

GLASGOW.—Erection of bowling green houses at Parks, for T.C. :—
Mosspark:
Mason work—
‡W. S. Bennie £374 14 1
Joiner work
‡W. Vernal..... 455 5 11
Slater work—
‡P. White & Co..... 134 9 8
Riddrie:
Mason work—
‡J. M'Glashan & Son..... 357 6 10
Joiner work—
‡R. K. Lindsay..... 492 1 6
Slater work—
‡P. White & Co..... 134 9 8

GREAT HOLLAND.—Reconstruction of bridge and culvert, for Essex C.C. :—
*A. J. Arnold, Chelmsford £3,149 13 6

GREAT STAMBRIDGE.—Erection of offices and fencing at school, for Essex C.C. :—
*T. J. Cook £416

HALIFAX.—For erection of new tramway offices in Powell-street, for the Corporation :—
Mason—
*Jagger Bros., Ringby £7,346 10 0
Joiner—
*J. H. Naylor & Son, Lee Mount 1,192 0 0
Steelwork—
*John Berry & Son, New Bank Foundry 405 0 0
Plumber—
*Thompson & Son 1,202 15 7
Plasterer—
*Rushworth & Firth, Halifax.. 1,439 0 0

HUDDERSFIELD.—For erection of two houses in Cadogan-avenue, Landley. Messrs. J. Berry & Sons, architects and surveyors, 3, Market-place :—
Mason—
*T. Bottomley & Son.
Joiner—
*J. Walker & Sons.
Slater—
*T. B. Tunnacliffe.
(All of Huddersfield.)

HULL.—For erection of six concrete houses, for the T.C. :—
*— Kettlewell ..... per house £475

HULL.—Construction of roof over pig pens at Market, for T.C. :—
*J. T. Scotney, Ltd., Hull..... £530 9

KENT.—For construction of the Maidstone and Folkestone new road, for the C.C. The cost will be about £400,000 :—
*W. Griffiths & Co.
*Road & Public Works Co.

KESWICK.—For erection of eight houses, for the U.D.C. Mr. J. Jenkins, Architect and Surveyor, Town Hall :—
Carpenter and Joiner—
*Wm. Cowperthwaite & Sons.. £2,425 13 7
Plumber—
*Wm. Green 887 0 0
Painter, &c.—
*T. W. Walker 606 0 0
(All of Keswick.)

LEEDS.—For painting work at the Town Hall, for the T.C. :—
*H. Shaun £260 10

LEEDS.—For painting work at the Municipal Building, for the T.C. :—
*Carter & Frankland £308 19

LEEDS.—For painting work at the Great George-street offices, for the T.C. :—
*J. Ingledew & Son..... £132 8

LEEDS.—For painting work at the York-road baths and library, for the T.C. :—
*Dearden Bros. £306 15 6

LEEDS.—For painting work at Bramley baths, for the T.C. :—
*Dearden Bros. £274

LEEDS.—For erection of new hospital, for the Ministry of Pensions, at Gledhow :—
*Hy. Atkinson & Sons, Ltd.

LEEDS.—For the reconstruction of premises at No. 4, East Parade, for Messrs. Holt & Co., Ltd., and conversion into offices. Messrs. Chorley & Gribbow, Park-place, Leeds, architects :—
*Armitage & Hodgson, Leeds.

LIVERPOOL.—For exterior painting and repairs to City Chambers, for the T.C. :—
*Tipping Bros. £240

LIVERPOOL.—For erection of 500 concrete houses, for the T.C. :—
*M. A. Goswell, Wolverhampton per house £465
406
(Subject to M.H. approval.)"

LIVERPOOL.—For erection of 50 concrete houses, for the T.C. :—
*Bonding Block Constructional Co., London ..... per house £399
(Subject to M.H. approval.)

LONDON.—For plastering the walls, and performing decorative and other works to No. 6 Ward, at St. Luke's Hospital, Chelsea, for the Chelsea B.G. Mr. E. J. Harrison, Lic.R.I.B.A., architect, of Crouch End, N.8 :—

J. P. D. Dennis, St. Albans	£1,269
Norfolk Contractors, Ltd., Holborn Viaduct	1,256
Fred Cousins, Holloway	1,099
H. A. Brown, Allsop-street	1,085
M. Greenwood & Son, Ltd., Harlesden	1,073
White & Johnson, College-place	900
Aldin Bros. & Davies, Queen's Gate-gardens	895
H. Parkinson & Co., Camberwell-road	879
H. A. Thomas & Son, East Dulwich-grove	850
Hammond & Barr, Beauchamp-place	777
*W. Chappell, Maida Vale.....	728

LONDON.—For external painting and repairs to the Guardians' Schools, Hornsey-road, for the Islington B.G. Mr. E. J. Harrison, Lic.R.I.B.A., architect, of Crouch End, N.8 :—

Fred Cousins, Holloway	£7,428 14 7
Barham & Cox, Finchley-road	6,840 0 0
Leonard Lown & Co., Holloway	5,967 0 0
J. A. Hunt, Ltd., Highgate-hill	5,821 0 0
J. Catterall & Sons, Ltd., Vauxhall Bridge-road	5,789 0 0
E. Proctor & Son, Plumstead	5,550 0 0
A. H. Inns, Ltd., Holborn....	5,497 0 0
Wm. Bell & Son, Holloway..	5,427 6 0
Stevens & Sons, Highgate....	5,386 0 0
*M. Greenwood & Son, Ltd., Harlesden	5,274 0 0

LONDON.—For extension to the messroom at Townmead-road, for the B.C. :—

Wallis Bros.	£957 11
Swann Bros.	1,175 0
Mitchell Conveyor Co., Ltd.	897 0
W. J. Marston & Son (approximately)	750 to £800
G. Roberts	843 0
*R. Dixon & Sons	797 10

LONDON.—For cleaning and painting White Oak, for the Metropolitan Asylums Board :—

F. J. Langston	£2,918 5 0
C. H. Boyd & Son, Ltd.....	2,463 0 0
Norfolk Contractors, Ltd.....	2,352 0 0
F. Long & Sons.....	2,260 0 0
R. Mansell	2,255 0 0
P. Miller & Son	1,994 0 0
E. Proctor & Sons	1,979 0 0
M. Greenwood & Son, Ltd. ..	1,959 8 9
A. H. Inns, Ltd.....	1,897 0 0
M. Peaster & Son	1,795 0 0
L. Kazak.....	1,785 0 0
J. Hocking & Co.	1,727 0 0
H. A. Thomas & Son.....	1,636 0 0
*D. C. Bowyer.....	1,488 10 0

LONDON.—For erection of additional special rooms at the West Kensington Central School, Fulham, for the L.C.C. :—
*J. Marsland & Sons, Ltd..... £488

MALDON.—For erection of (*a*) six houses at Hayeleigh, and (*b*) eight houses at Tolleshunt, for the R.D.C. :—
*P. C. Sayer, Great Totham .... (*a*) £2,502 7
(*b*) 3,171 7

NEWMARKET.—For erection of houses on the Stamford-street site, for the U.D.C. :—
*Linzell & Edmondson.

NEWPORT (I. of W.).—For erection of houses on the Trafalgar estate, for the T.C. Mr. T. Ross Pratt, Town Clerk, 38, Quay-street :—

	"*E*" *Design, per pair.*
A. P. Williams, Newport, I.W.	£915
W. G. Simmonds, Newport, I.W.	886
H. E. Day & Sons, Ltd., Cowes, I.W. ..	860
H. Hall & G. E. Ince, Newport, I.W. ..	847
*T. E. W. Phillips, Carisbrooke, I.W. ..	818
	"*F*" *Design, per pair.*
A. P. Williams, Newport, I.W.	£1,065
W. G. Simmonds, Newport, I.W.	945
H. E. Day & Sons, Ltd., Cowes, I.W. ..	975
*T. E. W. Phillips, Carisbrooke, I.W. ..	886

PENRITH.—For the erection of 30 houses, for the U.C., on a site at the junction of Greystoke and Newton roads :—
*John Laing & Sons, Carlisle £13,404

PONTLLANFRAITH.—For erection of a secondary school, for the Monmouthshire E.C. :—
*S. F. Leadbetter, Newport £20,994

PORTSMOUTH.—For alterations to 44, Fratton-road, in connection with the Fratton-road widening scheme. Mr. A. J. Lewis, architect, Portsmouth :—
*John Lay & Co., Portsmouth.

ROTHERHAM.—For erection of 50 houses on the Dalton housing site, for the R.D.C. Mr. J. Lotty, architect, Moorgate-street :—

Reeves, Charlesworth & Co., Sheffield	£27,421 17 10
Roads and sewers	689 0 0
Robt. Snell & Sons, Ltd., Rotherham	26,683 10 0
Roads, &c.	471 15 0
Geo. Saul & Sons, Ltd., Rotherham	24,890 0 0
Roads, &c.	540 0 0
*Thomason & Co., Rotherham	22,315 0 0
Roads, &c.	357 10 0

ROTHERHAM.—For erection of a pair of houses, for the T.C. :—
*Teuter Foundry Co. £840

ROTHERHAM.—For erection of two steel houses, for the T.C. :—
*— Weir £800

ROTHERHAM.—For construction of a sewage works at Brampton Bierlow, for the R.D.C. :—
*Mollekin & Sons £12,242

ROTHERHAM.—For erection of 50 houses at Thurcroft, for the R.D.C. :—
Mollekin & Sons—

Parlour type	each £482
Non-parlour type	„ 438

ROTHERHAM.—For erection of 50 houses, including roads and sewers, at Dalton, for the R.D.C. :—
*W. Thomason £23,672 10

SALFORD.—For erection of a transformer sub-station at Pendleton, for the T.C. :—
*J. F. Moore, Eccles £665

SHEFFIELD.—For erection of three transformer stations at (*a*) Edward-street, (*b*) Abbey-lane, and (*c*) Blagden-street Park, for the T.C. Mr. S. E. Fedden, General Manager and Engineer, Commercial-street. Quantities by General Manager and Engineer :—

‡(*a*) J. Eshelby & Sons, Sheffield ..	£1,019 0
‡(*b*) H. C. Hornbuckle, Sheffield ..	937 3
‡(*c*) J. Eshelby & Sons, Sheffield ..	912 0

SHEFFIELD.—Erection of public conveniences, for T.C. :—
Roper & Sons, Ltd.—

Fulwood Tram Terminus	£682 0 0
Weedon-street	494 14 6

SOMERSET.—For reconstruction and improvement of a portion of the main road between Bristol and Weston-super-Mare, for the Somerset C.C. :—
*Joseph Coles & Son, Clevedon £17,676 12 2

SPENBOROUGH.—For structural alterations to the Council's destructor works at Liversedge, for the U.D.C. :—
*F. Wood, Liversedge.

ST. ALBANS.—For erection of the proposed Children's Home, for the B.G. :—

H. Knight	£11,975
J. Hammond & Son.....	10,886
Miskin & Son	10,798
E. Dunham & Son	10,742
A. W. Sharp	10,189
H. Lacey	10,080
J. T. Bushell	9,995
Winter & Ward	9,772

STANLEY.—For erection of 20 houses on the Shield-row housing estate, for the U.D.C. Mr. A. Routledge, Council Surveyor, Stanley, Co. Durham :—

	Per house.
Hardy & Co.	£600
G. E. Ridley.....	485
J. H. Wood	462
P. Heel	452
*T. W. Raper (10 houses)	432
*W. F. Rendle (10 houses).....	432

(All of Stanley.)

STRETFORD.—For work at Gorse Park Central School, for the U.D.C. :—
Fencing and Gates—
*T. Blackburn & Sons, Ltd. £370 0 9
Wood Block Flooring—
*R. W. Brook & Co., Ltd..... 778 7 0

LONDON.—For laying water mains in various places, for the Metropolitan Water Board :—

	24 in. main, Wood Green to Southgate.	15 in. main, reducing to 12 in. from Nunhead to Lower Sydenham.	18 in. main, Grange-road and Elers-road, Ealing.
*Wm. Press & Son	*£13,998 5 2	£11,630 10 2	£8,010 11 2
*John Mowlem & Co., Ltd.	14,562 0 6	*10,919 5 9	8,112 0 2
*Whittaker Ellis, Ltd.	14,511 4 4	13,310 11 1	*7,889 11 3
R. Robinson & Co.	14,888 8 8	12,493 3 8	8,572 14 4
Wilson Lovatt & Sons, Ltd.	16,894 14 11	13,800 0 2	9,158 15 9
Wm. Muirhead, Macdonald, Wilson & Co., Ltd.	24,165 18 0	18,693 17 0	12,587 10 6

TORQUAY.—For erection of the proposed shelter on the raised terrace at the south end of Denton Gardens, for the T.C. :—

J. Longley & Co.	£1,579 0
W. J. Cearns	1,572 10
J. B. Edwards & Co.	1,556 0
F. Sandell & Sons	1,383 0
*G. W. Still	1,110 0

TORQUAY.—For painting 86 houses at Westhill, for the T.C. :—

*Tilby & Elliott £340 9

TORQUAY.—For completion of the Great Hill reservoir, for the T.C. :—

*Fothergill Bros., Exeter £13,350

WALLASEY.—For erection of a passenger shelter on the new landing stage at Seacombe, for the T.C. :—

*E. F. Blakeley & Co. (Liverpool), Ltd., Birkenhead £1,614
(Amended tender.)

WALSALL.—For erection of six additional houses, for the T.C. :—

*Richards, Smith & Co. £2,155

WEYMOUTH.—For proposed extension to the ladies' conveniences, Esplanade, for the T.C. :—

D. Grant	£1,658 0
Bird & Cox, Ltd.	1,396 11
*Jesty & Baker	1,380 0

WHITBY.—For the construction of the harbour crossing section of the Whitby Sewerage Scheme, for the U.D.C. :—

*J. Gill, Ltd. £13,538 17

WITHAM.—For erection of (*a*) five pairs of parlour type houses, and (*b*) 16 non-parlour type houses, for the U.D.C. :—

‡Wager & Son ..... per pair (*a*) £905 15
,, (*b*) 783 14

WOLVERHAMPTON.—For building ferro-concrete foundations for a rotary water screening plant, for the T.C. :—

*Wilson Lovatt & Sons £396 17 8

WOLVERHAMPTON.—For erection of 60 houses, for the T.C. :—

*A. Powell £22,830
(Subject to M.H. approval.)

WORCESTER.—For erection of Open-Air School, Worcester, for the T.C. Mr. W. Ransom, City Surveyor, Guildhall :—

T. Broad, Malvern	£5,612 0 0
Wood & Sons, Worcester	4,249 0 0
Brazier, Ltd., Bromsgrove	4,156 0 0
Collins & Godfray, Tewkesbury	4,030 0 0
Guest & Co., Worcester	3,915 0 0
Stokes Bros., Worcester	3,800 0 0
Haughton Bros., Worcester	3,744 19 4
Phelps & Johnson, Worcester	3,515 15 0
*C. Kimber, Worcester	3,493 18 0

Welsh Building Industry.

Mr. A. W. Julian, Pontypridd, presided over representatives of the employers and employed from all parts of the South Wales area, at a meeting of the South Wales Joint Council of the Building Trade Industry, held at Cardiff recently.

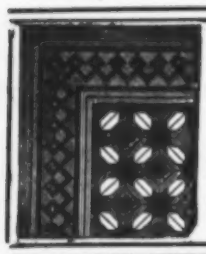
The question of fixing a working code of rules to coincide with the national code was discussed, and various recommendations made. The question of forming committees under the Wheatley Housing Act was also discussed, and Mr. D. John, Llanelly, for the operatives, said that they were ready to go forward with such a proposal. For the employers it was stated that until they were directed and instructed by the national body nothing could be done in the matter.

Madrid Building Materials Exhibition.

A Royal Order, dated December 22, 1924, authorises the temporary importation, free of duty, of goods destined for the above-mentioned Exhibition (to be held from January 31 to February 16), provided they are cleared through the Customs Houses of Irun, Port Bou, Bilbao, Pasajes, Barcelona and Valencia, by one of the following Customs agents :—Viuda de Eugenio Betsellere, Enrique Argimon, Gerardo Gutierrez, Dimas Gonzalez, Simorra y Gabriel, S. en C., or Sanz y Miguel.

Department of Overseas Trade.

His Majesty's Acting Consul at Lisbon (Mr. C. Broughton) has forwarded to this Department information regarding the construction of the commercial port of Vila Real de Santo Antonio (Southern Portugal). Tenders for this work are to be submitted before March 21, 1925. United Kingdom firms in a position to supply British materials can obtain further particulars regarding this call for tenders on application to the Department of Overseas Trade, 35, Old Queen-street, London, S.W.1, quoting reference A.X.1630.



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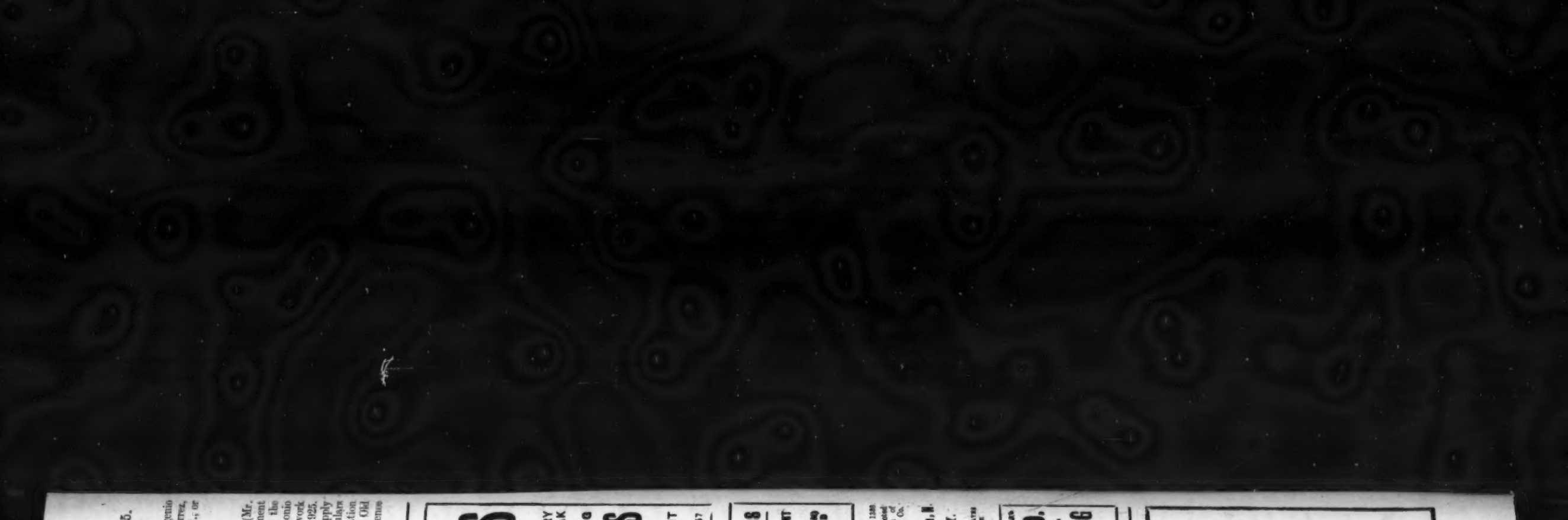
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